



HONG KONG

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REPORTS
1957-58

DIRECTOR OF AGRICULTURE
FISHERIES AND FORESTRY

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HONG KONG
ANNUAL DEPARTMENTAL REPORT
BY THE
DIRECTOR OF
AGRICULTURE, FISHERIES & FORESTRY
FOR THE
FINANCIAL YEAR 1957-58

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EXCHANGE RATES

Where dollars are quoted in this Report, they are Hong Kong dollars. The official rate for conversion to pound sterling is HK\$16=£1 (HK\$1=1s. 3d.). The official rate for conversion to US dollars is HK\$5.714=US\$1 (based on £1=US\$2.80) but a more realistic, though approximate, rate based on the local fluctuating open market would be nearer HK\$5.90=US\$1.

Note: The weights and measures used in this Report are:

4.8 mows	.	.	.	.	.	=	1 acre
6 dou chung	.	.	.	.	.	=	1 acre
1 picul	.	.	.	.	.	=	133 lbs.
1 catty	.	.	.	.	.	=	1.33 lbs.
1 tael	.	.	.	.	.	=	1.33 oz.

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PART 1

ADMINISTRATION AND GENERAL

INTRODUCTION

THE year 1957/58 was a bad one for the primary producers of the Colony. Floods, typhoon weather, very much reduced prices for primary products—all added their quota to a lean year. The New Territories farmer on his small holding is particularly sensitive to falling prices for his produce. Despite the large urban market the pig and poultry raiser who must import concentrate feeding stuffs and the vegetable cultivator with rents to meet are particularly vulnerable when the market is flooded with Mainland produce. In the special circumstances of Hong Kong where it is not possible to meet the full food requirements of the Colony from the farming areas, import controls, price fixing or other devices to protect the local farmer, such as are used in territories where primary production is the main concern of the people, are not considered to be appropriate here.

2. With these ever present problems the teachings of the department are directed to the diversification of farm effort in so far as it is practicable on the small holdings of the Colony. The rice farmer with an acre or preferably two acres of land is in a better position to adopt these teachings because he can incorporate livestock on his holding and produce vegetables and sweet potatoes on his fallow land following the harvest of his second rice crop. The vegetable cultivator is more vulnerable on extremely small holdings of a few dou chung, as are also the specialist pig and poultry raisers. For the vegetable man some hope lies in producing earlier and later maturing varieties and selective produce. For the pig and poultry specialist more use should be made of locally grown produce for feeding, approved vaccines for disease control, the breeding of faster maturing livestock such as cross-bred pigs and the production of poultry for selective markets which are now covered by importations from the United States and elsewhere. The fisherman must also move away from one type of fishing and by mechanization equip himself for general fishing. Above all when it is practicable the farmer should develop his activities in order to meet the food needs of his family. If cash can be made, well and good; but

under Hong Kong conditions good subsistence by diversification of effort should be the primary aim.

3. Despite many difficulties and conscious of the problems which beset the primary producer the services of the department have been used to the fullest in his interests. In a country where (i) all the best land has already been taken up, (ii) holdings are small in area, (iii) very little land and that of marginal quality remains to be developed and (iv) population pressure threatens existing farm land, achievements in terms of development cannot be spectacular. The year under review however was one of solid achievement in the several fields which are the department's concern not the least of which were the emergency duties following floods and typhoon which extended the staff of all branches to the fullest.

POLICY

4. The policy of the Agriculture, Fisheries and Forestry Department remained unchanged. It is concerned in helping the farmer and fisherman to produce as much food as possible without endangering soil fertility or overfishing inshore waters. Through the activities of the Forestry Division it is playing an important part in soil and water conservation and the production of firewood. In general the department is vitally concerned with the welfare of some 75,000 families comprising the farmers and fishermen of the Colony and in helping them to attain a progressively higher standard of living.

ORGANIZATION OF SERVICES

5. In keeping with approved policy certain changes were made during the year in the organization of departmental services. This was made possible by staff increases and the acquirement of further facilities. The purpose of the present organization is to obtain greater efficiency by confining the activities of officers to special sections and decentralizing as far as is practicable. A consequence of this is that senior subordinate officers in charge of sections have assumed greater responsibilities leaving more time for senior staff to deal with planning and development work.

(i) *Agricultural Division*

6. Certain responsibilities such as credit, education, crop compensation, land development, and land utilization have been divorced from the Agricultural Division and are now separate units each under

the control of a senior subordinate officer and responsible to the Director until the post of Assistant Director is filled.

7. The Agricultural Division now comprises two main sections, namely Field and Extension Services and Research Services. Field and Extension Services are directly controlled by two Senior Assistant Agricultural Officers operating in two divisions North and South. They are assisted by twelve officers of Assistant Agricultural Officer or Supervisor grade stationed in twelve districts of the Colony, who are responsible to the North and South Extension Officers who come directly under the Agricultural Officer.

8. Research Services in Agriculture are the responsibility of four officers, who have no field duties outside of experimental stations or plots. Existing services include vegetables, field crops, pest control and soil fertility. The Chemical Laboratory at Headquarters is available to assist these crop research teams who are responsible to the Agricultural Officer.

(ii) *Animal Industries*

9. The Senior Veterinary Officer is administratively responsible to the Director for the special services under his executive control and personally deals with the importation and movement of livestock, the export of animals and animal products and certain special aspects of advisory and extension work.

10. Under the supervision of the Veterinary Officer, the following sections have been established:

- (a) Disease Control (Field Service)—for farm stock,
- (b) Animal Husbandry—concerned with livestock improvement by selection, breeding and experimental work on management and feeding,
- (c) Diagnostic Service—laboratory diagnosis of diseases of farm stock. This section also prepares the lapinised rinderpest vaccine for the Colony,
- (d) Laboratory Animal Production Section.

11. In addition to these sections the Veterinary Officer assisted by the Senior Livestock Supervisor is concerned with regulatory duties under four sections of

- (e) Animal Quarantine,
- (f) Rabies Control,

(g) Dairy Inspection (including tuberculin testing),

(h) Meat Inspection.

As with the Agricultural Division the grouping of work under eight separate sections has led to an improvement in efficiency.

(iii) *Forestry Division*

12. The Forestry Division is organized into five district branches covering the New Territories. Each district is controlled by a Forestry Supervisor responsible for Forestry work of all kinds including afforestation, forestry lot work, amenity planting and protection. In keeping with policy the headquarters of the Division was transferred from Lai Chi Kok to the Tai Lung Nursery near Sheung Shui. This decentralization makes it possible for the Forestry Officer to concentrate on other aspects of Forestry work, in particular the planning and supervision of research duties to be undertaken by a fully qualified supervisor now stationed at Tai Lung.

(iv) *Fisheries Division*

13. No important changes were made in the organization of the Fisheries Division for the year under review.

WEATHER

14. During the early part of April, some areas in the districts of Ping Shan and Kam Tin were short of water. Pumps were sent to these areas to assist farmers in lifting water to irrigate their fields in preparation for the transplanting of the first paddy crop. Very heavy rain during May caused serious damage to vegetable crops, and in the low-lying districts certain areas were inundated by flood water and many were left badly covered over by silt, sand and rubble. Timely assistance by Government and the Kadoorie Agricultural Aid Loan Fund helped to alleviate the situation and enabled farmers to restore their fields, (except those which were badly damaged), to a fit state for cultivation. In spite of being totally submerged the paddy crop at this stage was not seriously affected.

15. Typhoon 'Wendy' struck the Colony on 17th July when only 50% of the first crop paddy had been harvested. In some of the low-lying areas where drainage is poor, considerable loss was caused by lodging and sprouting of the unharvested grain. Very dry periods occurred during August and the early part of September but on 22nd September Typhoon 'Gloria' struck the Colony, bringing heavy down-

pours of rain. Fortunately at this time 80% - 90% of the second crop paddy had not yet come into flower and little damage was caused to the first fresh water crop. Considerable damage was however caused to crops in the brackish water areas along the sea-front by sea-water being washed over the protecting walls and into the fields. In spite of these considerable variations in weather conditions the paddy harvest from the fresh water areas was considered satisfactory but from the brackish water areas the returns were poor.

16. Meteorological data of importance to agriculture and forestry compiled by the Royal Observatory is set out at Table 1:

TABLE 1
METEOROLOGICAL DATA 1957/1958

Month	Temperature			Relative Humidity	Total Rainfall in m.m. 1956/57	Total Rainfall in m.m. 1957/58	Total Sunshine Hours 1956/57	Total Sunshine Hours 1957/58
	Max. °F	Mean °F	Min. °F					
April ..	76.5	71.7	68.1	85	69.7	71.9	174.6	136.3
May ..	81.9	77.1	73.2	88	239.7	894.2	137.4	122.8
June ..	86.1	80.8	76.9	86	413.8	462.3	213.9	138.0
July ..	88.9	83.3	78.7	83	145.9	395.2	262.7	280.1
August ..	88.3	82.8	78.3	84	388.6	387.5	228.7	210.6
September ..	86.1	80.6	76.2	79	161.9	469.6	228.6	186.4
October ..	79.5	74.6	70.5	72	37.4	47.3	242.3	189.7
November ..	77.3	71.3	67.0	69	33.6	2.2	172.0	258.8
December ..	70.9	65.1	61.1	74	7.3	8.0	163.6	194.0
January ..	64.5	59.1	55.2	76	15.6	54.0	139.0	95.3
February ..	63.4	58.2	54.2	75	99.3	87.8	58.3	140.6
March ..	72.3	67.4	63.8	85	97.2	118.0	82.4	88.3
Total ..					1,710.0	2,998.0	2,103.5	2,040.9

Charts showing the monthly and annual distribution of rain in the different districts are included at Appendix 2, Figures 1 and 2.

17. Erratic weather which resulted in either drought or deluge conditions made farming extremely difficult and much praise is due the Chinese farmers for their tenacity and resilience under abnormal conditions.

18. For the fishermen weather conditions throughout the summer, which is ordinarily the main season for the inshore fishing craft (e.g., small long liners, purse seiners and little sailing shrimp trawlers) were most unfavourable. Unusually heavy rains frequently occurred from May to September. Typhoon weather during the period July to October, when typhoon signals were hoisted five times, interfered with fishing.

During one of these typhoons two small drag seine net boats were lost and three fishermen drowned. There was not however any large scale damage. Only during the first quarter of 1958 were conditions generally conducive to good fishing for all classes of boats.

LAND UNDER CROPS

19. In 1954 a land utilization survey of farm lands was made by the department; the data of this survey is recorded at Appendix 1 Table L together with that of a more recent survey made early in 1958. Summarizing this information the new survey reveals:

- (i) Land under vegetable cultivation is now 3,615 acres as compared with 2,254—an increase of 1,361 acres.
- (ii) Land under two crop paddy has dropped from 20,191 acres to 19,050 acres—decrease of 1,141 acres.
- (iii) There is an overall increase in land cultivated of about 307 acres of which 153 acres is accounted for by the extension of orchards.
- (iv) About sixty four acres less of field crops are now cultivated and 105 acres of abandoned land have been brought into cultivation.
- (v) About 13.1% of the total land area has been developed for agriculture.

20. The reasons for this change over from paddy to vegetables would appear to be:

- (a) The short term leafy type vegetables commonly grown in Hong Kong can be harvested more frequently than paddy: six to eight crops per annum is considered a normal yield. There is a good local market and therefore cash is more readily available.
- (b) Land owners, who rent their paddy land to vegetable growers, demand and receive a higher rental for their land. Paddy land is normally rented for $1\frac{1}{2}$ to 2 piculs of paddy per dou chung (1/6 acre) per annum. Whereas the same land if rented for conversion to vegetable production is let for two to four piculs of paddy per dou chung.
- (c) Many of the immigrants, who have entered the Colony in recent years and have settled in the New Territories, are essentially vegetable growers. These people own no land and have very little capital; they therefore need to grow crops which will produce a quick return.

PRODUCTION—SURVEY OF INDUSTRIES

A. AGRICULTURE

Paddy

21. Despite floods and typhoons an average crop of paddy was harvested. Fortunately the floods occurred before the flowering period of the 1st crop and 50% was harvested before typhoon 'Gloria' struck the Colony. Observations since 1953 show that the paddy crop suffers more from drought conditions. Planned improvement of water storage capacity and irrigation and the greater use of artificial fertilizers are having a noticeable effect on paddy yields. The paddy crop amounted to 493,650 piculs (29,864 metric tons). On a milling percentage of 68% 20,307.52 metric tons of rice were secured. A comparison of rice production over the past five years is set out as under:

TABLE 2

<i>Season</i>	<i>Production (Piculs)</i>	<i>Average Price (per picul)</i>	<i>Money Value of Crop (Estimated)</i>
1953	589,823	\$45.00	\$26,538,000
1954	429,780	36.25	15,579,000
1955	464,013	40.50	18,752,000
1956	442,152	40.00	17,686,000
1957	493,650	37.00	18,238,500

An analysis of paddy production and assessment of returns is set out at Appendix 1 Tables A, B & C.

Vegetables

22. Vegetable production in the Colony was only slightly lower than in the previous year—a reduction of about 3.4%. A total of 1,230,665.16 piculs were produced and marketed through the Vegetable Marketing Organization. The total value of vegetables was \$22,503,900 or \$446,700 more than in the previous year.

23. The Colony is producing about 66% of its vegetable requirements on about 3,615 acres of land which is about 1/7 of the area devoted to rice. In 1957 vegetables returned \$4,265,400 more than the calculated value of the rice crop.

24. The range of vegetables grown, yields, yields by district and monetary value are set out in Tables D, E & F at Appendix 1. As already mentioned serious damage was caused to vegetable fields and many crops were lost. Had it not been for this it is likely that vegetable production during the year would again have been a record. An examination of Table F indicates that vegetable production continues

to increase in Sheung Shui, San Tin, Kam Tin and Castle Peak and to fall in Kowloon and Tsuen Wan.

25. The average price paid for locally grown vegetables was cents 17.33 per catty whereas the average price of imported vegetables was cents 13.20 per catty. In spite of this difference in price in favour of local growers they complained that they found it very difficult to make a living. Some of the factors influencing the economy of vegetable growers are:

- (a) High prices paid in rent.
- (b) Labour, because of industrial expansion, has become scarcer and consequently wages have risen.
- (c) The cost of fertilizers has increased, particularly nightsoil which has been increased from \$1.30 to \$1.50 per picul.
- (d) Numbers in families have increased but land holdings have remained the same.
- (e) Many vegetable growers who endeavoured to increase their income by raising pigs have been affected by low prices ruling in 1957.
- (f) Adverse weather conditions, particularly the floods which occurred in May caused a great deal of damage to vegetable fields, and farmers were still trying to pay some of the money they borrowed for reclaiming and replanting these fields.

26. The average farmer follows a set pattern of farming in that he tends to grow the same crops every year on the same land at the same times. Fertility of the soil is maintained by the constant use of nightsoil which is applied in diluted form by watering it on to the plants two or three times a week.

27. The opening up of new land at higher altitudes will not only relieve the pressure on the existing land holdings but will give an opportunity to farmers to wean themselves from the stereotyped methods they have so far employed. A greater variety of crops spread over longer periods will help to offset competition and improve nutrition. Vegetables which are especially high in minerals and vitamins include broccoli, lettuce, mustard, parsley, carrots, sweet potatoes, cabbage, celery, chard, spinach, peas and corn. Those which are relatively low in nutritive value are beetroot, radish, turnip, okra, cucumber and melons. It will be noted that the kinds of vegetables commonly grown in this Colony are the leafy types most of which are high in nutritive value.

Fruit

28. The acreage under orchard crops increased from 952 acres in 1954 to 1,105 acres in 1958. Of this increase of 153 acres 138.47 are due to the activities of the Kadoorie Agricultural Aid Association and the Agricultural Division in developing the village orchard scheme. The main varieties grown are Wong Pei, local lemon, tangerine, Japanese Apricot, guava, papaya, lychee, pineapples and oranges. There is a good market for fruit at attractive prices in the urban areas and it is an avenue of development that is being carefully explored by the department. The Soil Survey at present being conducted shows that there are many suitable places in the upland areas for growing fruit of the hardier types. About 38,600 piculs of assorted fruits were harvested during the season valued at \$2,131,305. Of this about 9,000 piculs valued at \$635,440 were processed for export. The types of fruit grown for local consumption and export, estimated value, and summarized information on the Village Orchard Scheme are set out at Appendix 1 Tables G, H & I.

Export Crops

29. There is a small but important market for preserved or dried vegetables, fruits and other products for Chinese people resident overseas. The total value of twenty two separate products was \$2,736,772. The three most important items were waterchestnuts (\$1,331,916), Lychees (\$537,474) and Ginger (\$155,712). Another important venture is the growing of vegetable seed for export. In 1956/57 vegetable seed was valued at \$109,510 but due to floods and unseasonable weather this dropped to \$55,810 in 1957/58. At Appendix 1 Table J comparative information on type of product, quantity produced and value is set out in tabular form.

B. ANIMAL INDUSTRIES

30. The main livestock products of the Colony are pigs and poultry. A few cattle in excess of farm requirements are sold for slaughter and milk is produced for urban consumption from stall fed dairy stock. Geese and ducks are raised for local consumption and there is a small export of preserved ducks. Quail and quail eggs once a relatively important industry has now declined considerably. The rearing of pigeons for squabs which started to expand some two years ago is becoming an important venture for specialists in this line of business.

31. Apart from rice and vegetable farmers who raise pigs, and a few poultry and larger specialist breeders, the pig and poultry industry is speculative. The small pig raiser is faced with keen competition from the Chinese Mainland. Without access to swill or by-products from food industries he must purchase imported feeding stuffs. When the market is oversupplied with pigs and prices drop below \$1.75 per catty his margin of profit is small. Although the production of eggs is increasing in the New Territories the industry is mainly dependent on hatching eggs from China. When the market is oversupplied and prices fall it is only the larger producer who can weather the storm and hope for better times ahead. The village farmer with rice and vegetables and a few pigs and poultry as side-lines is less concerned with wide market fluctuations. If his land holding is of the order of 1 to $1\frac{1}{2}$ acres he can at least feed his family and acquire cash when markets are favourable.

Pigs

32. A total number of 861,307 pigs passed through the slaughter houses of the Colony. Of this total 249,944 (29%) were raised in the Colony. The corresponding figures for the previous year were 730,561 (total), 226,940 (local; 32%). Prices paid to farmers dropped to as low as \$1.40 per catty with an average figure at about \$1.50 per catty. Prices rose to about \$2.00 per catty around Chinese New Year. The price to butchers from dealers varied from \$1.70 per catty to \$2.30 per catty. The estimated value of pigs produced in the Colony for slaughter was in excess of \$24,000,000.

Poultry

33. On an average about 8,000 to 10,000 birds are marketed daily in Hong Kong. Local production amounts to about 1,200,000 annually and the total population is about 3.5 million birds. Local table birds sold from \$1.80 to \$2.20 per catty with a rise to \$3.00 per catty at Chinese New Year. Capons made \$3.00 to \$4.50 per catty; pullets \$3.00 to \$4.50 per catty. Fresh eggs (Leghorn grade A) brought \$3.00 to \$4.50 per dozen. Eggs of the local breed were priced at \$1.00 for eight from Chinese sources compared with \$2.00 per dozen from the New Territories. The value of poultry produced in the Colony for urban sale was estimated at \$3,600,000, about $\frac{1}{3}$ of the value for the previous year.

Cattle

34. There has been a plentiful supply of cattle throughout the year at fairly stable prices ranging from \$190 to \$220 per picul dressed weight. A total of 96,470 animals including 3,596 from local sources passed through the slaughter houses. The figures for the previous year were 77,939 and 4,568 respectively. The returns for the sale of local cattle exceeded \$1,869,000. See Appendix 1 Table Q.

Milk

35. From the twenty dairies of the Colony with a milking herd of 2,692 cows 11,155,875 lbs. of milk were produced and 10,971,425 lbs. sold to the public. Prices remained at about \$1.10 per lb. retail. Production for the previous year was 10,271,642 lbs. The returns from the sale of milk were approximately \$10,900,000. See Appendix 1, Table U.

Pigeons

36. The total breeding population of pigeons is now in the neighbourhood of 30,000 pairs and about 250,000 squabs were sold during the year. This is an important industry and has developed considerably over the past two years. Prices averaged about \$7.00 per pair of squabs with a maximum of \$10 per pair. At an average price of \$7.00 per pair the returns from this industry amounted to \$875,000. Production costs are low.

Ducks

37. Ducks are raised in the wetter areas of the Colony and along the banks of streams for home consumption and a limited export market as preserved ducks. The total duck population is estimated at 50,000. There appears to have been a falling off in the usual areas of the number of ducks raised and an increase in the geese population. On the Island of Lantau particularly at Tung Chung where water is available there has been a noticeable increase in the duck population. Any developments of this nature in rice growing areas are welcome additions to the general economy of small holders. About 100,000 birds are raised for home consumption and average in weight about three catties. A slightly larger number 127,000 were sold to processing factories for export. For local consumption the average price per catty was \$2.00; dried for export prices averaged \$5.00 per catty. Returns for local sales were estimated at \$600,000 and for export \$1,905,000.

Geese

38. Geese population is estimated at 2,000 breeding stock. They are kept mainly for egg production which per bird is about eighty eggs per annum. Eggs are worth about \$1.00 each and goslings \$2.00 to \$3.00. Some are sold as meat at \$2.20 per catty or \$10.00 per bird of 4.5 cattie. Returns from this industry are in excess of \$160,000.

Quail

39. The present population of quail in the Colony is only about 2,000. They are kept mainly for egg production which per bird is about twelve dozens a year. Some Cockerels are eaten valued at \$1.00 per head. During the year the price of quail eggs was steady at about eighty cents per dozen. Returns from this industry are estimated at \$19,000.

C. FISHERIES

Marine Fisheries

40. The total quantity of fish landed was slightly more than during the previous year and, at the same time, the highest figure on record since the British re-occupation of the Colony in 1945.

41. Recorded below with the permission of the Director of Marketing are details of the quantity and value of fish sold through the Fish Marketing Organization. These figures include the controlled landings of foreign (Japanese) fish. Figures in respect of the immediately preceding year are included for comparison:

TABLE 3

	Fresh Fish		Salt/Dried Fish		Total	
	Piculs (Tons)	Value (HK\$)	Piculs (Tons)	Value (HK\$)	Piculs (Tons)	Value (HK\$)
April 1957 to March 1958 ..	714,948 (42,556)	44,828,392	89,296 (5,315)	3,869,681	804,244 (47,871)	48,698,073
April 1956 to March 1957 ..	608,058 (36,194)	43,288,947	88,788 (5,285)	4,521,485	696,846 (41,479)	47,810,432
Comparison with 1956/57 ..	+106,890 (6.363) (+17.6%)	+1,539,445 (+3.6%)	+508 (30) (+0.6%)	-651,804 (-14.4%)	+107,398 (6,393) (+15.4%)	+887,641 (+1.9%)

1 Picul = 133 lbs. (16.8 piculs = 1 ton).

HK\$16.00 = £1.0.0 Sterling.

42. The increased landings were partly due to the good seasons enjoyed by a large number of mechanized junks, particularly the mechanized deep sea junk trawlers, large long liners and Pa T'eng. Trawler company vessels also brought in more fish than during the previous year. Another factor responsible for the increase was the

unusually large quantities of imported fish received from the Chinese Mainland.

43. Although a little better than they were two years ago, fish prices were unsatisfactory. During 1956/57 the overall average wholesale price for fresh fish had been \$71 per picul; this dropped to \$63 per picul (a decrease of 11·3%) during the year under review. Salt/dried fish went down from \$51 to \$43 (or 15·7%). A table in which the quantity, value and average wholesale prices of fish landed during the twelve years 1946/47 to 1957/58 are recorded, with monthly figures for the year under review, is set out at Appendix 1 Table V.

44. An analysis of the main species of fish landed, together with figures for the previous year, is set out at Appendix 1 Table W.

45. More detailed information concerning landings and fish prices is contained in the annual report of the Director of Marketing.

Minor Fisheries Products

(i) Pond Fish

46. The total production of locally harvested pond fish was estimated to be 8,400 piculs (i.e. 500 tons) valued at \$1,700,000 made up as follows:

April to June, 1957	...	...	...	...	2,400 piculs
July to September, 1957	...	...	...	...	1,800 "
October to December, 1957	...	...	...	...	1,800 "
January to March, 1958	...	...	...	...	2,400 "
Total	...	...	...	...	<u>8,400 piculs</u>

47. Figures for 1956/57, which was also considered to have been a good year, were 6,900 piculs (i.e. 410·7 tons) valued at \$1,400,000.

Fish Prices

48. As may be seen from the following table, the wholesale prices received for pond fish continued to remain fairly high:

TABLE 4

		<i>Average price per picul</i>	
		<i>1956/57</i>	<i>1957/58</i>
Grey Mullet (below 1 lb. each)	...	\$140—200	\$130—200
Grey Mullet (over 1 lb. each)	...	200—320	200—350
Big Head	...	140—200	160—210
Silver Carp	...	140—200	110—190
Grass Carp and Bream	...	180—320	180—300
Mud Carp	...	120—200	120—180
Common Carp	...	120—200	140—200

49. The reason for the high production and good prices lay in the fact that, as in the previous year, imports of living pond fish from China continued to be received at the rate of only some 300 to 500 piculs per day. (During 1955/56 the figure had been as high as 700 to 800 piculs daily).

50. Most of the locally reared fish sold consisted of small size Grey Mullet, resulting from the good harvest of mullet fry captured during January, February and March, 1957.

Fish Fry Trade

51. Some seventeen million carp fry were received from China during the year of which 15,085,000 fry were exported by Hong Kong dealers compared with 5,932,309 for the previous year. Prices were much lower than in the previous season when supplies from China were limited.

(ii) *Oysters*

52. There was a marked increase in oyster production from the edible oyster beds of the Colony. Total production amounted to 25,101 piculs (1,494.1 tons) of fresh oyster meat valued at approximately \$1,750,000; comparative figures for the previous year were 15,963 piculs (950.2 tons) valued at \$1,280,000.

53. The 25,101 piculs harvested were utilized as recorded below :

TABLE 5

	Fresh Oyster Meat (Piculs)		Dried Oysters (Piculs)		Oyster Juice (Piculs)	
	Estimated local con- sumption	For Pro- cessing	Estimated local con- sumption	Export to U.S.A.	Estimated local con- sumption	Export to U.S.A.
1/4/57 to 31/3/58	2,400	22,701	1,903	629	400	1,779
Total Production	25,101 (1,494.1 tons)		2,532 (150.7 tons)		2,179 (129.7 tons)	
Approximate Value	HK\$1,750,000					

54. Prices obtained by producers for fresh oyster meat, and by processors for oyster products, were rather lower than during the previous year. Details are recorded in the following table:

TABLE 6

	<i>PRICE (H.K.\$) per picul (133 lbs.)</i>		<i>Comparison</i>
	<i>1956/57</i>	<i>1957/58</i>	
Fresh Oyster Meat ...	\$ 80 to \$ 100	\$ 70 to \$ 100	Slightly cheaper
Dried Oyster	900 to 1,400	900 to 1,400	Same
Oyster Juice	530 to 550	450 to 520	Much cheaper

55. It will be noted that the total production of fresh oyster meat in 1957/58 was considerably higher (25,101 piculs or 1,494.1 tons) than that for the previous year (15,963 piculs or 950.2 tons). The main reasons for this were that:

- (a) 1957/58 was a particularly good year and much greater quantities were harvested from the deeper water areas of Bed No. 1B than ever before. (One producer's figure for 1956/57 was only 332,574½ catties while for 1957/58 it was 870,904 catties).
- (b) Local consumption of fresh oyster meat and oyster products (the latter including some local exports to countries other than the United States of America) went up by at least one hundred per cent. This was because imports from China were greatly reduced.
- (c) There was an increase of 40% in the quantity of Hong Kong oyster sauce sold in America. (Exports to America of dried oysters showed a decrease of 14% as low priced Japanese dried oysters have got into this market).

Certificates of Origin

56. Details of the produce certified for export to America are as follows:

(a) Fresh Frozen Shrimp

57. 29,069 piculs valued at \$4,603,000. For the previous year the quantity was 7,035 piculs valued at \$1,604,000.

(b) Oyster Products

58. 62,953½ catties (37.5 tons) of dried oyster valued at \$510,270.00 plus 177,966 catties (105.9 tons) of oyster juice valued at \$733,728.50.

(c) Silver Shrimp

59. 123,935 catties (73.8 tons) of silver shrimp, valued at \$78,528.58 for conversion into shrimp sauce and paste.

(d) Spotted Fish

60. 60,892 catties (36.2 tons) of Spotted Fish—i.e. the brackish water Walking Goby (*Boleophthalmus chinensis*)—valued at \$153,342.90 for canning.

(e) Fresh Shrimp

61. 9,263½ catties (5.5 tons) of fresh shrimp, valued at \$21,665.65 for conversion into shrimp slices and noodles.

62. Details of the produce certified for export to the United Kingdom under Imperial Preference Certificates are as follows:

(a) *Oyster Products*

63. 400 catties (0.24 tons) of dried oyster valued at \$3,200 and 826 catties (0.5 tons) of oyster juice, valued at \$3,570.

(b) *Fresh Shrimp*

64. 10,665 catties (6.3 tons) of fresh shrimp, valued at \$26,270.75 for conversion into shrimp slices and noodles.

(c) *Frozen Shrimp*

65. 5,797½ catties (3.5 tons) of uncooked shrimp valued at \$21,734 and 11,580 catties (6.9 tons) of cooked shrimp valued at \$46,032.

(d) *Silver Shrimp*

66. 10,301 catties (6.1 tons) of silver shrimp, valued at \$8,327.90 for conversion into shrimp sauce and paste.

(e) *Red Snapper Fillets*

67. Twenty one catties (free sample) of frozen red snapper fillets.

FACTORS AFFECTING PRIMARY PRODUCTION

(i) *Adverse Weather*

68. Reference has already been made to adverse weather conditions and their effect on primary production. Typhoon 'Wendy' struck the first rice crop when only 50% of it had been harvested. This resulted in serious losses in lowlying poorly drained areas from lodging and the sprouting of unharvested grain. Typhoon 'Wendy' caused serious damage to brackish water paddy but satisfactory yields were obtained from fresh water areas. Very heavy losses were sustained by vegetable farmer during the May floods. Disturbance to fishing by weather conditions was not reflected in fish landings.

(ii) *Plant Pests and Diseases*

69. The usual rice pests, such as the rice stem borer (*Schoenobius incertellus* W.), Leafhopper (*Empoasca fabae*), Leaf roller moth (*Tortrix postvittana*) and Army worm (*Cirphis unipuncta* Haworth), were not so troublesome as they have been in the past. This may be due to:

(a) the torrential downpours of rain during May, July and September which checked the emergence of these pests,

- (b) greater control measures exercised by the farmers under the continued assistance and guidance of the department's Pest Control team.

70. The above reasons however did not apply to vegetables, which were continually attacked by flea, beetles, aphids, cut-worms, melon flies, cucumber beetles, snails, etc. A certain measure of control was achieved by the use of some of the insecticides listed at Appendix 1 Table K. The results shown at Appendix 1 Table K are those which were obtained in tests carried out on a small scale by the Entomologist on the agricultural stations and not in field trials. There has been a marked improvement in the methods used by farmers to control insects during the past five years. This is the result of excellent work by field and extension workers of the department who through practical demonstrations to the farmers in their own fields have gained their confidence and broken through the barrier of old beliefs and customs related to 'Fung Shui'.

(iii) *Animal Diseases*

71. Steady progress in the control of animal diseases is being maintained by the Animal Industries Division. This service to farmers, both laboratory diagnosis and field, is a potent factor in the overall economics of livestock raising in Hong Kong faced as it is with strong competition from Mainland China and the lack of land for growing animal feeding stuffs. With the exception of the introduction of Type Asia I Foot and Mouth Disease Virus on the Dairy Farm, Hong Kong, there was no unusual increase in incidence of known diseases nor evidence of the introduction of new ones. Newcastle Disease in poultry and Swine Fever in pigs were kept within reasonable proportions by reliable vaccines imported and distributed by the department.

72. It would appear from statistics that the incidence of some diseases has increased considerably. This however is not necessarily true. Peasant farmers are becoming more appreciative of the assistance offered by our field services and many cases of disease which hitherto would not be reported are now being brought to notice. Earlier reporting of disease has also resulted in a higher recovery rate and a decrease in the numbers involved in each outbreak.

(iv) *Competition from the Chinese Mainland*

73. During the year returns to the farmer from livestock products and vegetables fluctuated widely and many were hard put to it to remain

in business. Serious damage to vegetable fields from the May floods necessitating additional costs in repairs and replanting added to the burden. Government loan funds were brought to bear on the problem and much needed assistance was given, but low prices made it difficult for the farmers to repay their loans within the agreed period or even to remain in business against organized competition from the Mainland.

(v) *Fishing Grounds*

74. Very little of the fish marketed in Hong Kong is caught within the boundaries of local British territorial waters; most of it is obtained from the adjacent Chinese territorial waters and from international fishing grounds.

75. It has always been customary in the past for nearly all the Hong Kong based fishing craft, with the exception of only the more modern company operated distant water trawlers, to be licensed both in Hong Kong and in China. A few vessels were, in addition, also licensed in the nearby Portuguese Colony of Macau. Until quite recently there were never any serious complications concerning either fishing grounds or disposal of catches. Towards the end of the year, however, the Chinese authorities attempted to persuade all Hong Kong based boats in the habit of fishing in Chinese territorial waters to join the Communist 'Co-operative Societies'. Once having joined such a society, the fisherman concerned would be expected to obey its regulations; to surrender the ownership of his boat, pool his gear and leave his family on shore. He would also be expected to land all his catches in China, and bank the proceeds on the Mainland.

76. Local fishermen were more reluctant to take such a step and, in addition, the owners of well over a thousand fishing junks normally based in China migrated to Hong Kong with their vessels.

77. The situation at the end of the year under review was that the fisherfolk were unsettled as a result of the pressure being put on them, and there was some lack of incentive for Hong Kong fishermen, fish dealers or others engaged in the trade, to either make loans or to invest money in new boats or engines. Some fishermen sought alternative employment. Chinese policy was constantly being changed and varied from district to district and fishermen were being arbitrarily punished for disobeying unpublished regulations.

(vi) *Essential Requirements*

78. Artificial fertilizers and insecticides of approved quality were in adequate supply. Pure line rice seed, vegetable seed and seedlings, and grafted orchard stock produced by the department were supplied at cost price. Essential drugs and vaccines were available either from departmental sources or local business houses. Regular supplies of Swine Fever and Newcastle Disease vaccines from Thailand and Malaya were organized and distributed by the department. Pig breeding stock (improved local native breed) numbering 418 raised at Castle Peak Station were sold to farmers and the Kadoorie Agricultural Aid Association who purchased 230 for pig breeding schemes. In addition thirty exotic pigs from Sheung Shui Station were sold to farmers for specialized breeding. A total of 1,226 piculs of meat and bone meal prepared from slaughterhouse waste at Kennedy Town was distributed to farmers by the department at the reasonable price of \$45 per picul. Concentrate feeding stuffs of variable quality were in adequate supply with less variation in price than in the previous year. Marine engines were available for the 848 new vessels which joined the mechanized fishing fleet during the year. The delivery of matured nightsoil to farmers by the Marketing Department was efficiently maintained. Apart from the provision and distribution of essential requirements financial assistance to obtain supplies was provided from the J. E. Joseph Trust Fund, the Kadoorie Agricultural Aid Loan Fund, the Vegetable Marketing Loan Fund and the Junk Mechanization Fund.

FINANCIAL AID TO PRIMARY PRODUCERS

79. Several funds have been established in the Colony to provide loan money for farmers and fishermen. The Marketing Department controls the J. E. Joseph Trust Fund and money is also available from the Vegetable and Fish Marketing Organization administered by the Director of Marketing and Registrar of Cooperative Societies. For information on these funds the report of the Director of Marketing should be consulted.

80. The Agriculture, Fisheries and Forestry Department is responsible for the administration of the Kadoorie Agricultural Aid Loan Fund and the C.D. and W. Mechanization Loan Fund for fishermen. Details concerning the purpose of these funds and their administration are recorded in the previous annual report.

(i) *Kadoorie Agricultural Aid Loan Fund*

81. Early in the year this fund with assets amounting to \$500,000 was further strengthened by the addition of \$750,000 provided by Government. The fund which now stands at \$1,250,000 has been of great assistance in helping farmers to diversify and improve their farming and to tide them over difficult periods. The services of the department were fully extended during the flood period in May in providing loan money to those who had suffered damage or loss. To cope with the problem nine centres were established to deal with the numerous applications for assistance.

82. In keeping with agricultural policy Government decided at the close of the year to provide additional staff to set up a credit section to deal specifically with this work. This will give much needed relief to field officers and permit them to concentrate on their extension and other field duties.

83. Since the fund commenced to operate towards the close of 1955 a total of 9,009 loans have been issued amounting to \$1,210,892.92. A summarized statement of the position as at the end of the financial year is recorded below—Table 7. The audited accounts and Auditors' report is included at Appendix 7.

TABLE 7

K.A.A. LOAN FUND CASH STATEMENT AS AT 31ST MARCH, 1958

<i>No. of Projects</i>	<i>Purpose</i>	<i>Funds on Loan</i>	<i>Total Amount Repaid</i>	<i>Total Amount Issued</i>
1,030	Livestock purchase & Housing	\$170,020.90	\$179,029.10	\$ 349,050.00
1,233	Livestock feed	161,529.20	217,755.80	379,285.00
15	Fish Ponds	28,724.95	1,795.05	30,520.00
47	Building materials	3,735.00	5,760.00	9,495.00
28	Land Development	17,362.60	3,787.40	21,150.00
5,594	Seeds & Fertilizer	51,501.55	186,001.17	237,502.72
56	Plant & Pest control & Farm equipment	14,675.00	10,705.00	25,380.00
935	Flood Damage Assistance	134,429.00	10,961.00	145,390.00
71	Widow Scheme	12,719.20	401.00	13,120.20
9,009	Total	\$594,697.40	\$616,195.52	\$1,210,892.92

With loan money provided from the fund farmers purchased a total of 374 piculs of balanced fertilizer and twenty five piculs of certified paddy seed.

(ii) *The C. D. & W. Loan Fund for Fishermen*

84. Sixteen fishermen obtained loans from the C.D. & W. Fund administered by the department for the mechanization of their junks with diesel engines. Loans ranged from \$3,700 to \$10,000 each. During the year twenty three fishermen repaid their loans in full and sixteen others were granted a further extension of time.

(iii) *Kadoorie Agricultural Aid Association*

85. Working in full co-operation with the department, this philanthropic organization which has done so much for the villagers of the New Territories continued to expand existing enterprises and develop new ones:

- (a) *Local Village Works*: A total of 42,262 bags of cement were distributed to villagers to enable them to carry out work approved by the department or the District Administration. By agreement completed work is maintained from the local public works vote controlled by the District Administration. The cement was used for the construction of dams, wells, bridges, paths, embankments, irrigation channels and sea walls.
- (b) *General Assistance*: Animals numbering fifty one sows, 570 weaners, one boar, fifteen cattle and 1,111 poultry were distributed to villages for breeding purposes. Also 300 piculs of balanced fertilizer and fifty gallons of insecticide were made available to village authorities for the maintenance of village orchards. A total of sixty six sprayers for insect control were distributed to villages in ten districts.
- (c) *Pumping Service*: The water pumps which were given to the Agricultural Division five years ago to assist farmers during dry periods were used to capacity during the year. In all forty six villages received this assistance involving 1,420 working hours and an area of 313 dou chung.
- (d) *Village Orchards*: Eleven new orchards were established during the year bringing the total to sixty and the area covered by 24,819 trees to 165.38 acres. Vigorous action by the department has led to much improvement in village orchard maintenance.
- (e) *Pig Scheme*: A survey of conditions in the New Territories by the department showed that some 2,000 widows of farmers were in straitened circumstances. It was decided to assist these people whose main form of livelihood was cutting grass for fuel by (a) setting them up as pig raisers or (b) in other ways depending on

their age or circumstances by providing them with working animals, poultry or an additional pig or two.

86. The Widows' Pig Scheme as it is known has three important features (i) it provides assistance to very poor people, (ii) with approved pig stock it enables the Animal Industries Division to push up the breeding stock of the Colony and (iii) it gives opportunity to the department to teach on a large scale under controlled conditions better pig husbandry. The scheme was officially opened on the 4th September, 1957 at Chung Uk, Lam Tei and Shan Ha Tsuen. By the close of the year 189 people in forty seven villages received 119 pigsties, 612 pigs, 961 poultry and fourteen working cattle. One widow received a gift of a sampan.

87. Details of this assistance are contained in the published reports of the Association.

SUMMARY OF PRIMARY PRODUCTION

88. The only reliable statistics are those compiled by the Marketing Department for vegetables, marine fish and fresh frozen shrimps. All the others are estimates based on slaughter house records, areas of crops under cultivation, yields assessed by the department, latest figures on stock populations, information derived from inspections in connexion with certificates of origin and information supplied by producers. Most of this is reliable and in regard to quantities is in many cases underestimated. The main difficulty lies in relating quantities to prices which vary considerably. For the purpose of this survey 'average' prices which are on the low side have been accepted.

89. It must be clearly understood however that until reliable information is available it is impossible to give a true picture of actual productive effort. A first attempt was made to compile information of this nature in the 1956/57 report and for comparative purposes, where data is doubtful, similar methods have been used in reaching an estimate in this report. As the years go on more reliable figures will emerge and provide a truer picture of the position. It is however important to attempt such an estimate because it (i) gives some idea—believed to be on the low side—of our primary productive effort, (ii) records to some extent the effects on production of farming and fishing problems, (iii) helps the department to evaluate the impress of its services for the primary producer and (iv) points to trends in production and new developments.

90. The main difficulties arise in assessing the value of livestock products particularly pigs, poultry and cattle. In the case of pigs and cattle exact numbers are known; in the case of poultry even this can only be a crude estimate. The weights of pigs and cattle are not known with certainty but the former are believed to average about sixty five catties and cattle on the hoof at 260 catties. The figures recorded in the tables are based on this with average prices of \$1.50 per catty for pigs and \$2.00 per catty for cattle. The poultry figure was compiled from numbers estimated from records available to the department assessing a low average price per bird at \$3.00 each.

91. Most of the other data is reasonably correct except that guesses based on population figures and food habits have to be made in connexion with the consumption of pigs, poultry and vegetables by the people of the New Territories. On the whole the New Territories people eat more per head than do the urban dwellers. The figure for marine fish caught by New Territories fishermen and sold in China or consumed by themselves is based on estimates made by the Marketing Department.

92. The value of local produce is estimated at \$183,822,000 as compared with \$193,724,000 in the previous year. There has been an estimated fall in the value of products by \$9,902,000 (5.1%). The largest falling off has been with pigs and poultry due to the low prices ruling during the period under review. Apart from pigs and poultry most of the other items show increases both in volume and total returns. Of particular interest in the large increase in fresh frozen shrimp which have risen in value from \$1,604,000 in 1956/57 to \$4,603,000 in 1957/58.

TABLE 8
SUMMARY OF PRIMARY PRODUCTION

<i>Item</i>	<i>Value 1956/57 (nearest \$1,000)</i>	<i>Value 1957/58 (nearest \$1,000)</i>	<i>Remarks</i>
Paddy	17,686,000	18,239,000	1st crop \$30/picul. 2nd crop \$45/picul.
Vegetables	22,056,000	22,504,000	Records of Marketing Department.
Vegetables	4,410,000	3,750,000	Consumption by 50,000 families of N.T. Slightly overestimated in 1956/57.
Fruit	1,242,000	1,496,000	—
Sweet Potatoes ..	6,132,000	6,425,000	409,500 piculs from 4,550 acres at \$15.69 per picul.

TABLE 8—Contd.

<i>Item</i>	<i>Value 1956/57 (nearest \$1,000)</i>	<i>Value 1957/58 (nearest \$1,000)</i>	<i>Remarks</i>
Export Crops	2,885,000	2,736,000	Exported under certificates of origin. Includes fruits.
Pigs	28,821,000	24,000,000	Consumed in urban areas including N.T.
Pigs	10,000,000	7,000,000	Consumed by 50,000 families of N.T. Estimate based on 4 weaner/family at \$2/catty.
Cattle	2,612,000	1,869,000	Consumed in urban areas including N.T.
Rice straw	210,000	309,000	Underestimated in 1956/57. 61,700 piculs at \$5/picul.
Poultry	11,400,000	3,600,000	Consumed in urban areas including N.T.
Poultry	6,000,000	3,000,000	Consumed by 50,000 families of N.T. Estimate based on 20 birds per family/annum at \$3/bird.
Eggs for hatching & eating	1,000,000	200,000	About 400,000 leghorn eggs at \$3.50/doz. and 500,000 local eggs at \$2/doz.
Ducks	614,000	1,905,000	Exported under certificates of origin.
Ducks	681,000	600,000	Local consumption at unit price of \$2/catty.
Pigeons, Quails and Geese	487,000	1,054,000	Large increase in sale of squabs.
Fresh Milk	8,217,000	10,900,000	Hong Kong, Kowloon and N.T. dairies. 10,900,000 lbs. at \$1/lb.
Marine Fisheries ..	47,810,000	48,698,000	Exact records from Marketing Department.
Marine Fisheries ..	4,781,000	4,869,000	Stable diet of fishermen. Estimated at 10%.
Marine Fisheries ..	11,952,000	12,174,000	Fish sold in China, only 50% of catch landed in Hong Kong.
Minor Fisheries Products:			
(i) Pond fish ..	1,400,000	1,700,000	8,400 piculs.
(ii) Oyster & Sauce	1,280,000	1,750,000	25,101 piculs.

TABLE 8—*Contd.*

<i>Item</i>	<i>Value 1956/57 (nearest \$1,000)</i>	<i>Value 1957/58 (nearest \$1,000)</i>	<i>Remarks</i>
(iii) Fresh Frozen Shrimp ..	1,604,000	4,603,000	29,069 piculs (Marketing figure).
(iv) Fresh Shrimp ..	23,000	48,000	11.8 tons under certificates of origin.
(v) Silver Shrimp ..	21,000	87,000	79.9 tons under certificates of origin.
(vi) Spotted Fish ..	91,000	153,000	36.2 tons under certificates of origin.
(vii) Fan Mussels ..	200,000	112,000	37.7 piculs (22.2 tons).
(viii) Cultured Pearls	20,000	—	
Camphor wood ..	89,000	41,000	Sale of over-mature and decayed camphor trees.
Total ..	<u>193,724,000</u>	<u>183,822 000</u>	

DEPARTMENTAL SERVICES

93. Details of work undertaken by the four divisions of Agriculture, Animal Industries, Fisheries & Forestry are recorded in the special sections of this report dealing with these services. It will be sufficient here to draw attention to matters of general interest and important developments.

(i) *Division of Agriculture*

94. Work was continued by the land utilization services with the assistance of the Soil Survey Officer in searching for locations in Lantau Island suitable for the resettlement of farmers who will have to give up farming in the Shek Pik valley to allow the new reservoir to be built. It will be difficult to resettle these people as one group and impossible to find paddy land in area equivalent to that which they now hold. Resettlement would be easier in small groups but the people prefer to retain their present social relations. It is obvious also that farming methods will have to change to conform with land conditions and the main farming effort will have to be the raising of vegetables and livestock. A plan was prepared by the Director with this object in view including the setting up of a small agricultural station on the area chosen for training and demonstration. A complete survey of Shek Pik was made including an assessment of the value of existing farms and property.

95. Valuable work was done by the land utilization section aided by the Soil Survey Officer in mapping areas throughout the Colony which could be developed for agricultural resettlement. Several of these places were recommended to Church groups interested in this problem and plans of development prepared. The attention of Government was drawn to the growing menace to farm lands of squatter settlements in the New Territories and in co-operation with the District Administration plans to deal with this were prepared.

96. Reference has already been made to the re-organization of this division to meet the many and varied duties it is called upon to undertake. The appointment in the new financial year of a separate credit section will help considerably to ease the heavy burden of work and allow a more effective approach to fundamental agricultural problems. Development continued on the new dry land farming station at Ta Kwu Ling and sufficient land has been prepared to enable the agronomist to start work on trials of field crops and fodders. The Tai Po Agricultural Station has now been completely changed over to the raising of budded and grafted root stock for orchard extension and for research work on orchard crops. The soil fertility of the extension area of Sheung Shui Vegetable Station was considerably improved and important vegetable research work is not now handicapped through lack of space. Investigations were made for the setting up of new agricultural posts on Lamma Island, Tung Chung (Lantau), Tai O (Lantau), Kam Tin and Ha Tsuen. All agricultural stations were maintained at a high level of efficiency.

97. Outstanding work undertaken by extension services was the investigation of the conditions of 2,000 widows of farmers for assistance from the K.A.A.A. As a result of this work plans were made and development work commenced on the K.A.A.A. Widows' Pig Scheme to which reference is made under the appropriate section of this report.

(ii) Division of Animal Industries

98. The services of this division continue to expand and under its new organization it is playing a very important part in the development of animal industries. An important factor in the increase of livestock populations is the more efficient control of animal diseases due to the field services of the division. Apart from the special duties recorded in the appropriate section of this report much time, thought and planning was given to the improvement of animal quarantine in relation to the proposal to construct two new slaughterhouses at Ma Tau Kok and

Kennedy Town. In the development field investigations have been made and suitable sites recommended for the holding under quarantine of imported Australian cattle and for local dairying which has expanded beyond existing land capacity. Of importance also is the decision reached by Government of setting up a Vaccine Laboratory at Castle Peak Agricultural Station under the combined control of the Medical Department and the Agriculture, Fisheries and Forestry Department for the preparation of medicinal and veterinary vaccines.

99. The exotic pig stock at Sheung Shui Pig Station greatly increased in numbers and the department was again able to supply this valuable stock to specialist pig breeders and make available a few exotic boars to assist farmers in producing quick growing cross-bred pigs which are very acceptable to the local market. In view of past problems of disease this service is being introduced slowly and under controlled conditions. There seems to be more promise today for artificial insemination and this is being thoroughly investigated with the purpose of setting up artificial insemination centres. Some exotic stock have now been moved to Castle Peak Agricultural Station and pig breeding facilities have been greatly extended at Sai Kung where studies are being conducted on cross-breeding and feeding. Of importance to Lantau farmers pig work is again being conducted at Silver Mine Bay Agricultural Station. This station was temporarily closed a year ago because of disease and was re-opened again when a suitable officer trained in livestock work became available. In the dry area of Ta Kwu Ling plans have been made to raise pigs under range conditions controlling them by electric fencing and feeding bulk foodstuff grown in the agricultural areas. Above all there has been a great increase in the services rendered by the division and a greater appreciation of the value of these services by the farming public.

(iii) *Division of Fisheries*

100. This small division continues to give outstanding service to the fishing industry in (1) the trial of gear and fishing methods, (2) its training classes for engineers, skippers and coxswains, (3) administrative matters and technical advice concerned with mechanization and craft design, (4) its close watch and study of developments and problems in the industry, (5) the extension of pond fisheries and co-operative activities with the Fisheries Research Unit of Hong Kong University.

101. The operational research work of the division has been confined to some extent to inshore waters but steps have now been taken

to remedy this. Provision was made in the 1958/59 estimates for a distant water fishing vessel of the M.F.V. type with modifications recommended by the Marine Department to suit local conditions. As recorded in the special section on fisheries, trips were made by Fisheries Supervisors on commercial trawlers to distant fishing grounds and important information recorded.

102. Following successful pilot schemes on pearl culture by private enterprise using the local Wing Oyster, careful studies were made of areas considered suitable for this new development and the steps to be taken regarding the conservation of the natural oyster. Recommendations regarding legislation to meet the special conditions of Hong Kong were submitted for consideration.

(iv) Forestry Division

103. The outstanding achievement of the Forestry Division was the establishment of 1,729 acres of new planting during the period under review. An important factor in this stepping up of afforestation was the arrangements made with the Commissioner of Prisons to use prison labour at Chi Ma Wan for afforestation work in Shap Long Forest Reserve on Lantau Island. Special provision was also made for afforestation work in the catchments of the two new irrigation dams at Lo Fu Hang and Hung Shui Hang—the Fu Shui Forest Reserve. Forestry Lot plantings totalled 380 acres of which about $\frac{2}{3}$ were established in the Sai Kung District. The work of the division in amenity planting is adding a new attractiveness to the scenic beauty of the New Territories. During the year over 12,000 trees were planted for amenity purposes in the New Territories—along the roadsides, in army camps, resettlement areas, bathing beaches and cemeteries. At Tai Po Kau a very attractive small park was formed on the roadside overlooking the sea scapes of Tolo Harbour.

104. There is no doubt that the policy adopted in 1953 is fundamentally sound and important progress has been made since then. The policy comes up for review in 1958 and certain recommendations for improvement will be made in the light of five years' experience. It is important to decide on a fixed annual target and to stabilize staff in keeping with financial resources. One essential additional need is a small but efficient research service to deal with the many problems of afforestation and silviculture.

(v) *Soil Survey*

105. The special project of the soil survey has proceeded very satisfactorily and the field work is almost completed. Soil analyses, mapping and interpretation of data will require an additional twelve months but enough has been done on agricultural soils to allow the research group of the department to lay down field trials for testing fertilizers and crop varieties, etc. on known soil types. The results of these trials followed by demonstration can then be recommended with greater confidence to farmers operating on similar soil types.

EDUCATION AND INFORMATION

106. Formal education is provided by the Fisheries Division in its Coxswains' training classes held at Aberdeen, Shau Kei Wan, Cheung Chau and Tai Po. Classes for skippers and engineers are also held at Aberdeen. The Agricultural and Animal Industries Divisions have introduced six weeks' courses of practical farm training for young farmers which are held in rotation at the main agricultural stations. The course involves both simple theory and practical work and includes lectures given by forestry and fisheries staff on forestry lot plantings and fish culture. A short training course for forestry staff was introduced during the year and conducted by the Forestry Officer at Tai Lung Forestry Nursery. Short training courses for staff of the Animal Industries Division on special topics were conducted by the Veterinary Officer.

107. Informal education by visual demonstrations, lectures and visits to stations is an organized feature of the work of extension services of the department as a whole. To this end fertilizer demonstrations in rice and vegetables were conducted in many areas of the Colony, and demonstrations in the value of special vegetable seed for different districts, and in control of insect pests were either set up with farmer co-operators or conducted on agricultural stations as special campaigns to which farmers were invited.

108. At Sheung Shui Vegetable Station to which farmers come for seed and seedlings of approved strains of vegetables, vegetable culture designed to secure a succession of crops including early and late maturing varieties was demonstrated. The more these methods are adopted the better will the vegetable farmer be able to contend with outside competition.

109. The annual Agricultural Show was an outstanding success. On this occasion all branches of the department make this an opportunity for education by setting up exhibits illustrating all phases of the department's work and ideas for development and improvement.

110. Of considerable importance also is the film unit of the department under the control of the Artist who also plays a major part in the preparation of posters and other visual education and information aids both for normal services and for the Agricultural Show. The film unit with its portable generator and educational films and slides prepared in consultation with Divisional Heads organized programmes and visits to villages, schools and many other centres in the New Territories. These films and slides dealt with practical topics such as 'How to grow paddy, vegetables and flowers', 'How to mix and apply fertilizers', 'The Control of Insects and other Pests', 'Pig and Poultry Husbandry', etc. Showings of seventeen separate films were made on forty seven occasions to an audience which totalled 15,332.

111. Weekly broadcast programmes were arranged by officers of the department and an officer from Radio Hong Kong. Talks on matters of agricultural interest were put over Radio Hong Kong every Sunday evening together with the farming calendar. A survey made of the popularity of these talks revealed that a great deal of interest has been stimulated amongst the farmers many of whom own small radio sets. Those who have not got their own sets gather around their neighbour's or listen in to broadcast in tea shops and restaurants. During the year talks on forty separate subjects were given by officers of the Agricultural, Animal Industries, Forestry and Fisheries Divisions. Officers who visit the villages of the New Territories have noticed that wireless sets are becoming more and more common even in the more remote district.

112. Apart from the foregoing farmers come to agricultural stations and posts for technical assistance, advice, to purchase livestock and planting materials or to apply for loans from the Kadoorie Agricultural Aid Loan Fund. Opportunity is taken during these visits to show anything of interest that is going on. In any case the intelligent Chinese farmer keeps his eyes and ears open during these visits and gathers a lot of useful information. Conducted tours of stations were also organized by extension officers for special educational purposes.

COMMITTEES AND CONFERENCES

113. The Fisheries Officer and Assistant Fisheries Officer (Fish Culture) attended the Seventh Session of the Indo-Pacific Fisheries Council at Bandung, Indonesia. The Forestry Officer attended the Fourth Session of the Asia Pacific Forestry Commission which was also held at Bandung, Indonesia. The Director was a member of an F.A.O. group that made a six weeks' tour of Japan, Philippines and India to study the organization and working of agricultural extension services. The Assistant Fisheries Officer (Marine) spent 3½ months in Japan studying the organization of the Japanese fishing industry, fishing craft and gear fishing methods and latest developments.

114. The Director of Agriculture attended all meetings of the Rural Development Committee and the Fisheries Advisory Council of which both he and the Fisheries Officer are members. The Director as Chairman and Trustee of the Kadoorie Agricultural Aid Loan Fund presided at the fortnightly meeting of the Committee which include also the Agricultural Officer, the Senior Veterinary Officer and the Senior Assistant Agricultural Officer (Credit Section). The Director, the Senior Veterinary Officer, the Agricultural Officer and the Senior Assistant Agricultural Officer (Credit) are also members in a private capacity of the Kadoorie Agricultural Aid Association.

VISITORS TO THE DEPARTMENT

115. The following visited the department during the year for discussions and tours, many being taken on conducted tours to the departmental agricultural, fisheries and forestry out-stations:

Mr. Harry E. Timmis, Chief, Fisheries Branch, Agriculture Division, Seoul, Korea.

Mr. John Hill, Member of Parliament, House of Commons, Westminster, London, S.W.1.

Mr. Robert Mathew, Member of Parliament, House of Commons, Westminster, London, S.W.1.

Mr. Soong Mink Kong, Acting Director of Fisheries, Federation of Malaya and Singapore.

Mr. Omar bin Buyong, Agricultural Officer, Johore.

Mr. S. T. Chari, Assistant Director of Fisheries, Government of Madras, India.

Mr. Chan Kwai Shang, Department of Agriculture, Jesselton, N. Borneo.

Mr. P. C. Ma, Dean's Office, College of Agriculture, National Taiwan University, Taipei, Taiwan.

Mr. Joseph S. Chen, Department of Biochemistry, National Defence Medical Centre, Taipei, Taiwan.

- Mr. M. R. Qureshi, Director, Central Fisheries Department, Government of Pakistan, Karachi (Pakistan).
- Mr. Y. S. Tsiang, Secretary-General, Joint Commission on Rural Reconstruction, Taipei, Taiwan.
- Mr. Y. T. Mao, Plant Product Branch, F.A.O. Rome, Italy.
- Mr. H. S. Swingle, President, American Fisheries Society, Professor, Fisheries Management Alabama Polytechnic Institute, Auburn, Alabama, U. S. A.
- Mr. E. Melville, C.M.G., Assistant Under-Secretary of State for the Colonies, Colonial Office, London.
- Minister V. A. Arola, Counsellor of Agriculture, Government of Finland.
- Mr. Erkki Aalto, General Manager of the Finnish State Railways, Finland.
- Mr. Vichai Vorachard, Agriculturist, Thailand.
- Mr. Muneshige Watanabe, Former Head of Marine Products Department, Hokkaido University, Japan.
- Mr. Shigeaki Shindo, Chief of Resources Division of Regional (Nagasaki) Research Institute, Ministry of Agriculture, Fisheries & Forestry, Japan.
- Mr. Charles Walker, Imperial College of Tropical Agriculture, Trinidad.
- Dr. Homer D. Chapman, Chairman of the Department of Soils and Plant Nutrition, California, U. S. A.
- Sir Harold Graham Hodgson, Tidmarsh House, Pangbourne, Berks, England.
- Earl M. Hughes, Ph.D., B.S., University of Illinois, Illinois, U.S.A.
- Dr. Max Visehl, University of Kisel, Institute for World Economy, Germany.
- Mr. G. M. Roddan, C.M.G., Colonial Office, London.
- Mr. Jeung Keun Hahn, Chief of Fisheries, Pusan Regional Office, Office of Marine Affairs, Korea.
- Mr. Seok Ju Sin, Managing Director of Korea Purse-seine Fisheries Association, and President of Nam Yang Fishing Company.
- Mr. Y. C. Liu, Director, Fisheries Bureau of Taiwan Provincial Government.
- Mr. T. O. Chen, Fisheries Specialist, Joint Commission on Rural Reconstruction, Taipei, Taiwan.
- Mr. James R. Mock, Washington D.C., U.S.A.
- Dr. C. V. Kulkarni, Director of Fisheries, Bombay.
- Dr. H. D. R. Iyengar, Director of Fisheries, Mysore.
- Dr. S. Varadharajan, Director of Fisheries, Madras.
- Mr. P. A. Durnat, Forest Department, Malaya.
- Mr. A. D. Parsons, Forest Department, Sarawak.
- Mr. N. I. Welsh, T. & H. Engineering and Forestry, Vancouver, Canada.
- Mr. C. W. Hindley, T. & H. Engineering and Forestry, Vancouver, Canada.

PART 2

AGRICULTURAL DIVISION

Officer-in-charge: Mr. N. F. Wright, I.S.O., M.B.E.—Agricultural Officer

116. The policy of the Agricultural Division through its extension and advisory section is to teach farmers better cropping methods, the value of better seed and planting materials, the way to control major insect pests and crop diseases, the economical use of artificial fertilizers, the need for compost and how to make it, the way to make the best use of the land by including orchard and fruit crops on non-arable land, the use of rice fallows following the second rice crop to grow catch-crops including vegetables and in association with the Animal Industries Division, the inclusion on their holdings of small livestock such as pigs, poultry, ducks, etc. in order to broaden economy and provide a valuable source of farm manure for compost making or direct application. This teaching is done by maintaining close contact with farmers and village organizations, and is based where possible on work undertaken by the research section of the division and is illustrated by demonstration either with farmer co-operators or by special groups of the department either in farmers' fields or on agricultural stations. In the direct educational field the division has played a large part in the farmers training scheme, organization of visits to agricultural stations, the weekly radio broadcast and the Agricultural Show.

117. Apart from the impress of the division on farming improvement through its extension and advisory services direct development work has been undertaken in the continuance of the village orchard scheme, resettlements sponsored by Church Institutes, resettlement of squatter farmers in the New Territories, inspection of farmer settlers occupying land under permit, the examination of claimants for assistance under the Widows' Pig Scheme and the planning of development and supervision of the scheme.

118. The research services of the division have continued with the important fundamental work of improving crop varieties—vegetables, field crop and rice; the testing of new strains of vegetable seed; the examination of new cropping techniques in relation to land-use; the

testing of fertilizer and insecticides; crop variety trials; fertilizers trials and cultural methods.

EXTENSION AND ADVISORY SERVICES

(i) *Village Orchards*

119. Orchards which have been developed under the Kadoorie Agricultural Aid Scheme now number sixty. They cover an area of some 135 acres of land situated in various parts of the Colony. Villagers were enthusiastic about the establishment of these orchards, but in many cases the care and maintenance of them have been disappointing, even to the extent of the department having to send men out to clear some of them up. Where trees are beginning to bear fruit improvement in the upkeep of the orchards has been noticed and it is believed that when the orchards are in full bearing all will be well. This lethargy on the part of the villagers has led to a slowing down in the development of village orchards by the department and the sponsors of the scheme, the Kadoorie Agricultural Aid Association.

120. During the year under review eleven new orchards were established and the unit concerned with this work organized farmer groups to clean up existing orchards and advised on fertilizer treatment and insect control. At the present stage of development and in view of the widespread distribution of these orchards, it is considered that they should be viewed as co-operator farmer—department demonstrations of what can be done in land utilization. Further developments will take place more slowly in keeping with firm assurances by villagers that they will be properly maintained.

(ii) *Crop Compensation*

121. The displacement of cultivators in the urban areas to make way for residential and industrial expansion has created a considerable amount of work in the form of assessment of crop compensation. Clearance of squatter areas particularly has involved the department in a great deal of this work, as each area cleared, has to be carefully measured, valued and the rate of compensation determined. One senior Chinese officer has been continuously employed on this work for the past year.

122. The small areas to be measured up and assessed amounted to only fifty acres involving a cash compensation of \$169,771. This does not appear to be very much, but the nature of the work demands

time, effort and patience with people many of whom are unreasonable in their demands. The Table L at Appendix 1 gives some idea of what is involved in this work.

(iii) *Resettlement Sponsored by Church Institutions*

123. Up to the end of March, 1958, the department helped the Church World Service and Catholic Relief Committee to resettle forty five families in the area of Cheung Sheung, Nam Shan, Luk Wu and Siu Tong. Four families assisted by the Hong Kong Christian Welfare Relief Council were settled at Chek Lap Kok. Details are as follows:

TABLE 9.

<i>District</i>	<i>No. of Families</i>	<i>No. of Persons</i>	<i>Land Cultivated</i>	<i>When Started</i>	<i>Sponsored By</i>
Cheung Sheung ..	7	34	21 D.C.	2. 3.56	Church World Service.
Cheung Sheung ..	4	22	5 D.C.	15.12.56	Catholic Relief Service.
Nam Shan	6	35	6 D.C.	15.12.56	— do —
Luk Wu	10	62	20 D.C.	10. 3.57	— do —
Siu Tong	9	—	—	16. 9.57	Church World Service.
Siu Tong	9	—	—	20.12.57	— do —

124. Each of the families was settled on two acres of Crown Land and the following donations were made by the Church Services:

- (i) 1 cow per 2 families—estimated cost \$ 400
- (ii) 2 pigs per family —estimated cost 200
- (iii) 1 house per family —estimated cost 1,500
- (iv) A monthly subsidy of \$20 per adult and \$10 per child, for a period of eighteen months.

Chek Lap Kok Resettlement

125. The resettlement at Chek Lap Kok was sponsored by the Hong Kong Christian Welfare Relief Council and is managed by their Secretary, Mr. S. Y. Lee. Four families—refugees from the Mainland—totalling twenty five persons were settled on this Island.

126. At present each family cultivates about an acre of land planted with crops such as ginger, peanut, sugar-cane, and taro. No land suitable for paddy was available. A few gilts were purchased from the department for breeding purposes and at present there are about one hundred pigs on the Island. The settlers own five sows and a boar was recently loaned to them by the department.

127. The resettlement was started in August 1956. For the first eighteen months of resettlement a subsidy of \$150 per month was given to each family of five in addition to living quarters.

(iv) *Agricultural Permits—Crown Land*

128. Permits to occupy new land for development for agricultural purposes are issued by the District Administration. A year after such a permit has been issued the land is inspected by a member of the Agricultural Division who reports on the extent to which the land has been developed. Progress reports are submitted annually. People who have received permits and have made no attempts to develop the land are liable to have their permits cancelled. Practically all Crown Land for which permits are obtained is hillside land and only suitable for growing vegetables on terraces or the planting up of fruit trees and pineapples. During the year 184 applications involving ninety two acres of land were inspected and reported on by officers of the department.

(v) *Widows' Pig Scheme*

129. The survey work in connexion with this scheme was undertaken by the extension services and involved careful inquiries into the circumstances of the people concerned and decisions regarding their ability to raise pigs. In several cases assistance took the form of supplying a few chickens, adding pigs to existing sties, repairing existing sties or supplying working animals. In the course of the survey well over 2,000 deserving cases were discovered and steps taken to construct sties and supply pigs financed by the K.A.A.A. Land problems were cleared with Village Elders and the District Administration, and the construction work carried out by contractors of K.A.A.A. supervised by field officers. On the completion of this development work general management and supervision become the responsibility of the Animal Industries Division. General supervision will be maintained until the farmers are able to manage their own affairs, when the activities of the Animal Industries Division will revert to normal advisory services. This is a major development project which should do much to improve the living standard of poor, and in some cases almost destitute people.

(vi) *Special Surveys*

130. Officers of the Agricultural Division are responsible for crop surveys in connexion with rice production and export crops. In this latter service the work involves (a) certification of farmers who produce crops for export, (b) the accurate measurement of areas under individual crops and (c) the assessment of yield. The division also records annual changes in land utilization. Summarized information resulting from these field duties are recorded at Appendix I Table L.

(vii) *Crop Pests and Plant Disease Control*

131. The insect pest and plant disease control team visited ninety seven villages, spraying and assisting in spraying 580.7 dou chung of crops and 4,936 fruit trees. During these operations fifty five sprayers were used and seventy gallons of insecticide.

(viii) *Orchard Planting Material*

132. The Agricultural Station at Tai Po has been developed into a nursery for the propagation of fruit trees. During the period under review 6,000 rough lemon, 2,500 Cleopatra mandarin, 2,000 pomelo, 3,000 Japanese apricot, 1,500 Wong Pei, 1,000 lychee, 3,000 longan, 500 peach, 1,000 papaya and one hundred Chinese olive seeds were planted on this station. In addition to this 20,000 citrus and 3,800 seeds of other fruit were planted at the Castle Peak Station. The total number of seedlings raised amounted to about 40,000. Selected citrus scions were grafted on to the rough lemon root stock with very good results. A great number of the grafts were distributed to village orchards and there was an increasing demand by farmers for many of the varieties mentioned above for planting in their individually owned orchards.

(ix) *Extension and Advisory Duties—General*

133. Apart from the special tasks referred to above and educational services mentioned in Part 1 of this report, district agricultural officers (1) maintained agricultural stations at a high level of efficiency; (2) made visits to individual farmers in connexion with requests for loans and provided the committee with special reports on each applicant. (A total of 5,020 applications were dealt with during the year); (3) provided emergency centres, investigated every case and worked long hours of overtime on flood damage assistance; (4) by example on agricultural stations, by frequent advisory tours in the districts, and by demonstration with farmer co-operators taught the philosophy of the department which is (a) to encourage rice and vegetable farmers to include pig and poultry raising in their farm economy, (b) to use more fallow land for catch-cropping, (c) to plant up permanent fruit trees, (d) to control pests and diseases of crops and animals, (e) to use more compost made on farms reinforced with minimal dressing of artificial fertilizers, (f) to use good quality planting material as recommended and in general (g) to diversify their farming.

EXPERIMENTAL WORK—FIELD TRIALS

134. Experimental work and field trials are conducted on agricultural stations and at chosen centres elsewhere, and are confined to practical problems of concern to local farmers and the administration. In particular this work is directed to the improvement in yield of crops and sustained production at a high level.

Paddy Investigations—Introduction

135. Paddy is still the main crop grown in the Colony and the largest area of land is under this crop. Two crops per annum are grown; the first crop is sown in April and harvested in early July and the second crop is sown in late July and harvested in November. The average yield in the permanently irrigated areas where fertilizers are used and correct cultural methods adopted is two to three piculs of paddy per dou chung, which is approximately 3,200 to 4,300 lbs. per acre. The most popular varieties of paddy grown in the Colony are Indica; the Cantonese prefer a dry rice which when cooked does not stick together—Indica varieties adapted to the local environment also produce two crops within the period March to December.

136. The importance of seed production and distribution is fully recognized by the department, and although no breeding work has so far been attempted, a considerable amount of work on testing, selection and elimination of varieties and strains has been carried out during the past ten years. The production of better quality seed has been greatly increased by the co-operation of Farmer Demonstrators who are men who have been willing to set aside portions of their fields in areas where conditions are favourable and who have followed strictly the instructions given to them regarding the time of sowing and transplanting, rates and times of fertilizer application, weeding, spacing and pest control. The department assists these farmers by supplying good seed, fertilizers and insecticides and by maintaining strict supervision of the selected plots.

137. Trials over a number of years in various areas and under varying conditions have revealed that paddy can be grown under a fairly wide range of soil conditions. For successful paddy culture, the most important soil property is its ability to hold water on the surface. The finer, less permeable soils are found to be more suitable and to give higher yields and in this respect, silty clay loams, clay loams and clays are preferable. This statement of course applies to soils above the ploughsole. Paddy can withstand a fairly wide range of soil pH, but

normally does best on soils with a pH range of from pH5 to pH7.0. The fact that paddy is able to grow under water-logged conditions and has a fair tolerance to salinity makes it possible to grow the crop in such areas as Mai Po and San Tin where salinity is well above normal.

138. During the first crop season 11,200 catties of selected paddy seed were distributed to farmers in the New Territories and during the second crop season 2,559 catties of the variety Lo Shu Ngar which is a blast resistant variety.

139. The use of mixed chemical fertilizers by farmers on their paddy has greatly increased during the last five years. During the last paddy season 1,844 paddy growers received 374,280 catties of mixed fertilizer which was sufficient to cover 9,357 D.C. or 1,559½ acres.

Paddy trials

140. Summary of investigations carried out during 1957/58:

(i) *Variety Trial*

141. The object of this trial was to compare the yields of different varieties of paddy. The first crop was damaged by floods which occurred in May. Harvest results of the second paddy crop are summarized at Table 10.

TABLE 10

VARIETY TRIAL

Yields of Dry Paddy per Plot

Layout: 5 randomised blocks

Plot Size: 4 ft. × 10 ft.

<i>Variety</i>	<i>Mean Yield in lbs.</i>	<i>Difference from General Mean</i>	<i>Yield as Percentage of General Mean</i>
1. Kuk Tsai	1.10	— .93 *	54
2. Leung Cho Kuk	.52	—1.51 *	26
3. Pak Sap Yet	1.88	— .15	93
4. Lo Shu Ngar	2.20	+ .17	108
5. Kong Chim	2.52	+ .49 *	124
6. Hon Lo Chim	2.57	+ .54 *	127
7. Fall Crop Sze Mui	2.17	+ .14	107
8. Wong Huk Chai Mei	2.32	+ .29	114
9. Pak Huk Chai Mei	2.17	+ .14	107
10. Chan Shui Chim	2.40	+ .37 *	118
11. Sam Sin Kuk	2.33	+ .30 †	115
12. Sang So Kuk	2.72	+ .69 *	134

TABLE 10—*Contd.*

<i>Variety</i>				<i>Mean Yield in lbs.</i>	<i>Difference from General Mean</i>	<i>Yield as Percentage of General Mean</i>
13.	Ko Keuk	...	...	2.17	+ .14	107
14.	Hung Tau Keng	...	...	1.72	— .31 †	85
15.	Shui Chim	...	...	2.20	+ .17	108
16.	Wong Chim	...	...	2.37	+ .34 †	117
17.	Yau Chim	...	...	2.40	+ .37 *	118
18.	Sam Che Heung	...	...	2.25	+ .22	111
19.	Wong Lor Tsai	...	...	1.88	— .15	93
20.	Chai Tsai	...	...	2.44	+ .41 *	120
21.	Ham Moon	...	...	2.02	— .01	99
22.	Tai Lor	...	...	1.47	— .56 *	72
23.	Heung Keng Lor	...	...	0.97	—1.06 *	48
General Mean:				2.03		

* Significant at the one percent level.

† Significant at the five percent level.

142. It is notable that the early maturing variety, Kuk Tsai (1) and the glutinous paddy such as the varieties, Wong Lo Tsai (19), Tai Lor (22), Heung Keng Lo (23) gave yields lower than the general mean. The variety Leung Cho Kuk, which did very well the previous year, yielded a very bad crop during the year under review. Higher yields were obtained from most of the mid-early maturing varieties.

(ii) *Soil Fertility of Paddy Lands assessed by Pot Tests*

143. The object of this trial was to study the nutritional status of paddy soils in different districts.

144. The treatments were as follows:

- NPK complete nutrients; i.e. nitrogen, phosphate & potash added.
- NP minus potash; i.e. nitrogen and phosphate added.
- NK minus phosphate; i.e. nitrogen and potash added.
- PK minus nitrogen; i.e. phosphate and potash added.

145. Nutrients were applied at the following rates:

<i>Nutrient</i>	<i>Rate of Nutrient per pot</i>	<i>Fertilizer</i>
N	0.6 g.	Sulphate of ammonia (20% N).
P	0.4 g.	Superphosphate (18% P_2O_5).
K	0.18 g.	Muriate of potash (60% K_2O).

146. Mean yields of dry paddy in grams per pot are summarized in Table 11.

TABLE 11

N P K POT-TESTS

Yields of Dry Paddy in grams per pot

(Mean yields of four pots)

<i>District</i>		<i>N P K</i>	<i>N K</i>	<i>N P</i>	<i>P K</i>
Silvermine Bay	... ..	14.6	13.3	13.8	4.0
San Tin	... ..	14.9	10.5	12.0	6.0
Sheung Shui	... ..	12.4	13.0	12.4	4.5
Sai Kung	... ..	11.3	16.0	14.1	7.4
Lam Tsuen	... ..	18.4	15.0	16.7	8.2
Kau Lung Hang	... ..	15.8	13.2	12.6	3.6
Castle Peak	... ..	16.1	15.1	17.3	6.1
Mean	... ..	14.8	13.7	14.1	5.6
%	... ..	100	93	96	38

147. Results of the trial showed that paddy responded to nitrogen on all the paddy soils collected from cultivators' fields. The small response to phosphate and potash might be due to the small quantity of the nutrient used.

(iii) *3³ Factorial N P K Fertilizer Trial (Micro Plot Test)*

148. Owing to the fragmented nature of cultivated lands in Hong Kong, an attempt was made to carry out a micro plot test on paddy lands based on the technique introduced by R. V. Holme which was used to test in situ the soils of sugar estates in Jamaica.

149. Fertilizers were applied at the following rates:

TABLE 12

<i>Treatment</i>	<i>Rate of fertilizer per plot</i>	<i>Fertilizer</i>
N_0	no nitrogen	
N_1	17.4 g.	Sulphate of ammonia (20% N).
N_2	34.8 g.	Sulphate of ammonia (20% N).
P_0	no phosphate	
P_1	19.3 g.	Superphosphate (18% P_2O_5).
P_2	38.6 g.	Superphosphate (18% P_2O_5).
K_0	no potash	
K_1	2.9 g.	Muriate of potash (60% K_2O).
K_2	5.8 g.	Muriate of potash (60% K_2O).

150. The size of the plot fertilized was 3 ft. 4 in. $\times$ 3 ft. 4 in. and the recorded size 2 $\times$ 2 ft., i.e. one row of plants was discarded from each side of the plot. This trial was conducted at the Castle Peak Station. Yields of dry paddy in grams per plot are summarized in Tables 13 and 14.

TABLE 13
ORDER OF MERIT OF TREATMENT
(Mean yield of four plots)

Order	Plot	Mean Yield	Treatment	Order	Plot	Mean Yield	Treatment
1	26	138.0 g.	$N_{22}P_{21}K_1$	15	18	110.5 g.	$N_{12}P_{22}K_2$
2	20	129.0	$N_{20}P_{20}K_1$	16	11	109.8	$N_{10}P_{20}K_1$
3	19	128.8	$N_{20}P_{20}K_0$	17	17	108.5	$N_{12}P_{22}K_1$
4	23	127.3	$N_{21}P_{21}K_1$	18	13	107.0	$N_{11}P_{21}K_0$
5	27	124.8	$N_{22}P_{22}K_2$	19	9	94.0	$N_{02}P_{22}K_2$
6	24	124.3	$N_{21}P_{21}K_2$	20	3	92.3	$N_{00}P_{20}K_2$
7	21	122.3	$N_{20}P_{20}K_2$	21	2	90.8	$N_{00}P_{20}K_1$
8	12	121.0	$N_{10}P_{20}K_2$	22	7	89.0	$N_{02}P_{20}K_0$
9	25	119.5	$N_{22}P_{22}K_0$	23	6	85.5	$N_{01}P_{21}K_2$
10	22	117.8	$N_{21}P_{21}K_0$	24	5	85.5	$N_{01}P_{21}K_1$
11	16	117.3	$N_{12}P_{22}K_0$	25	8	84.3	$N_{02}P_{22}K_1$
12	14	117.3	$N_{11}P_{21}K_1$	26	1	84.3	$N_{00}P_{20}K_0$
13	10	114.5	$N_{10}P_{20}K_0$	27	4	77.5	$N_{01}P_{21}K_0$
14	15	113.3	$N_{11}P_{21}K_2$				

151. The results summarized in Table 14 emphasize the presence or absence of N P K nutrients.

TABLE 14
 3^3 FACTORIAL N P K FERTILIZER TRIAL (MICRO PLOT TEST)
(Mean yield of four plots)

N ₀					N ₁				N ₂				
	P ₀	P ₁	P ₂	Total	P ₀	P ₁	P ₂	Total	P ₀	P ₁	P ₂	Total	
K ₀	..	84.3	77.5	89.0	250.8	114.5	107.0	117.3	338.8	128.8	117.8	119.5	366.1
K ₁	..	90.8	85.5	54.3	260.6	109.8	117.3	108.5	335.6	129.0	127.3	138.0	394.3
K ₂	..	92.3	85.5	94.0	271.8	121.0	113.3	110.5	344.8	122.3	124.3	124.8	371.4
Total	..	267.4	248.5	267.3	783.2	345.3	337.6	336.3	1,019.2	380.1	369.4	382.3	1,131.8

Note: Figures are weights (in g.) of dry paddy.

152. The results showed that yields increase with the application of N_1 or N_2 and that results from the application of phosphate and potash are variable.

(iv) *New Paddy Introductions*

153. Seed samples of four varieties of Ponlai rice (Japonica type) and two varieties of Taiwan native rice (Indica type) were introduced from Taiwan. These seeds were received from the Joint Committee for Rural Reconstruction, Taiwan for trial.

154. The seed was planted under good paddy growing conditions at the Tai Po Agricultural Station where the following observations were made:

TABLE 15

<i>Variety</i>	<i>No. of tillers</i>	<i>Shape of grain</i>	<i>Rice stem borer</i>	<i>Susceptible to Black sheath rot</i>	<i>Leaf Hopper</i>
<i>(a) Ponlai rice (Japonica)</i>					
1. Taichung 65 ..	13	short	+++	+	+
2. Chia-nung-yu 242 ..	7	short	+		++
3. Kwanfu 1 ..	11	short	+++	+	++
4. Chianan No. 8 ..	8	short	+		+
<i>(b) Taiwan Native (Indica)</i>					
5. Pei-mi-fun (1st crop)	10	medium	+		
6. Mingtang (2nd crop)	19	not yet flower	++		+

+++ = high;

++ = medium;

+ = low.

Vegetable Investigations—Introduction

155. The cultivation of vegetables in the Colony is carried out on a very intensive scale. Small patches in and around the urban areas, in the squatter areas, and on the hillsides where water is available are all intensively cultivated. There has also been a tendency to grow more on the paddy fallows and to convert some of the old paddy fields to the raising of vegetables.

156. The main vegetable experimental station is at Sheung Shui. The testing of many kinds of vegetables including both European and local varieties is carried out on this station. Good work has been done by selection and multiplication of those varieties which have been outstanding under local climatic conditions. The value of these selected seeds and seedlings have been demonstrated to farmers, first of all through farmer demonstrators selected for this work by the department,

and subsequently seed has been produced in bulk and distributed to farmers.

157. Cabbages, cauliflowers, lettuce and tomatoes grow well during the cooler winter months from about October to March. In fact cabbages have been grown so successfully in recent years that farmers have built up quite a substantial export trade with Singapore. 148,000 seedlings mainly of lettuce, cabbage, cauliflower, tomato, broccoli, khale and peppers were issued to farmers. This quantity does not appear to be large, but the distribution of selected material in small quantities over a wide area forms a useful demonstration of superiority in comparison with normal planting material.

Vegetables Trials

(v) Vegetable Fertilizer Test

158. Continuing with the tests carried out during 1956/57, when water spinach was the indicating plant, and compost the fertilizer used as a check (see 1956/57 annual report page 43), the following trial was conducted this year at the Sai Kung Agricultural Station using Chinese spinach (*Amaranthus*), as the indicating plant and nightsoil as the check fertilizer.

159. Treatment:

- (a) Nightsoil (Check).
- (b) Organic fertilizer.
- (c) Inorganic fertilizer.
- (d) Nightsoil plus compost.
- (e) Peanut Cake supplemented by Urea and Muriate of Potash plus compost.
- (f) Inorganic fertilizer plus compost.

160. *Field Layout.* The size of each micro plot was 4 ft. $\times$ 8 ft. in a randomized layout with six replications for each treatment.

161. *Water Control.* This test was conducted in two ways:

- (a) Dry bed cultural method.
- (b) Raised bed cultural method, with water in furrows surrounding each bed.

162. *Rate of Fertilizer Used.* Nightsoil was applied at the rate of 3,000 catties per dou chung or 24,000 lbs. per acre, and compost at 3.33 tons or fifty six piculs per dou chung equivalent to twenty tons per acre. The amount of N, P_2O_5 and K_2O was equivalent to the

amount of nightsoil used (i.e. 3,000 catties per D.C.). The chemical analysis of nightsoil is as follows:

Nitrogen (N)	...	...	...	...	...	...	0.5%
Phosphate (P_2O_5)	...	...	...	...	...	...	0.5%
Potash (K_2O)	...	...	...	...	...	...	0.18%

163. *Calculation of different fertilizers used:*

	Amount applied per acre	N.	Nutrients P_2O_5	Furnished K_2O
1. Nightsoil (N 0.5% P_2O_5 0.5%; K_2O 0.18%)	24,000 lbs.	120 lbs.	12 lbs.	43.21 lbs.
2. Inorganic fertilizer				
(a) Ammonium sulphate (N 20%)	600 lbs.	120 lbs.	—	—
(b) Superphosphate (P_2O_5 18%)..	66.6 lbs.	—	12 lbs.	—
(c) Muriate of Potash (K_2O 60%)	72 lbs.	—	—	43.21 lbs.
Total	738.6 lbs.	120 lbs.	12 lbs.	43.21 lbs.
3. Organic Fertilizer				
(a) Peanut Cake (N 7.56%, P_2O_5 1.37%, K_2O 1.5%)	875.9 lbs.	66.2 lbs.	12 lbs.	13.1 lbs.
(b) Urea (N 46%)	117 lbs.	53.8 lbs.	—	—
(c) Muriate of Potash (K_2O 60%)	50.1 lbs.	—	—	30.1 lbs.
Total	1,043 lbs.	120 lbs.	12 lbs.	43.2 lbs.

164. *Method of applying fertilizer.* Nightsoil and other fertilizers were applied in liquid form by watering, and compost was applied as a basic fertilizer.

165. *Remarks.* The tests were not completed by the close of the year and results will be reported in next year's report.

(vi) *Tomato Cultural Method Trial*

166. *Pruning and Nonpruning of side shoots.*

Purpose of the Test: To study the effect on yield by pruning and nonpruning of side shoots in tomato culture.

Procedure: 360 seedlings were planted on the same piece of land. Half the seedlings were pruned of all the side shoots leaving only one single stem. The other set of seedlings were unpruned and side shoots allowed to grow. All seedlings received the same treatment throughout the test.

Variety used : Best of all

Sown on 14th August, 1957.

Transplanted 11th September, 1957.

Results :

	<i>Total No. of Plants</i>	<i>No. of healthy plants</i>	<i>No. of plants died</i>	<i>Av. Yield per healthy plant</i>	<i>Total yield catty</i>
Pruned ...	180	155	25	2.80 catties	434½
Nonpruned ...	180	170	10	4.77 catties	811½

Observations : It was observed in this test that:

- (1) The mortality in the pruned plants was higher than in the nonpruned plants.
- (2) The plants which were not pruned gave higher yields.
- (3) Pruned plants bore fruit about ten to fourteen days earlier.
- (4) Very little difference was noticed in the size, shape and quality between the pruned and nonpruned plants.
- (5) Fruit on unpruned plants suffered less from sun-scorch.
- (6) Less cracked and split fruit was harvested from the unpruned plants.

(vii) *Vegetable Varieties*

167. Some of the exotic vegetable varieties were tested for their adaptability to local conditions and the following varieties were found to be satisfactory:

Bean (Pole)

1. Kentucky Wonder White Seeded—a strain which matures about ten to fourteen days earlier than Kentucky Wonder.
2. Earliest of all.

Bean (Dwarf)

1. Bountiful.
2. Plentiful.
3. Canadian Wonder.
4. Long Green.

Cabbage

1. Copenhagen Market—an early strain with solid round heads.
2. Golden Acre—A little earlier than Copenhagen Market with smaller solid round heads.
3. Early Jersey Wakefield—Early strain with conical heads.
4. First Crop—Early strain with particularly solid conical heads.
5. Emperor—A medium variety with large conical heads.
6. Kniver Globe—A savoy variety with a good compact large heads.

Cauliflower

1. Improved Snowball—A variety that has been grown for a number of years, and still appears to be one of the most suitable varieties for this Colony.
2. Snowball 'X'—An early variety with big firm heads.
3. Snowball 'E', 'M' and 'Y'—are almost the same and are good firm headed varieties.

Tomato

1. Leader—An early variety which produces medium size fruit of deep red colour.
2. Conqueror—An early variety with medium size fruit and a heavy yielder.
3. Early Beauty—An early variety with medium heavy bearing fruit.
4. Amateur—A dwarf variety which needs no staking. It is a very heavy bearing type and an early variety. Fruit is uniform and medium. The only defect is that the fruits are waxy yellow when young, thus it is not so popular on the market when sold as green tomatoes.
5. Gold Pak—An ox-hearted type variety which produces large fruit weighing eight to ten ozs. each. It is a self pruning and heavy bearing variety with a delightful red colour when ripe. Fruits are seldom found cracked; it is a variety that shows great promise in the Colony and is favoured for its self pruning habits.

(viii) Onion (*Allium Cepa*)

168. Shallots (*Allium ascalonium*) are grown on quite a large scale in some of the more sandy areas of the Colony, but so far onions (*Allium Cepa* Linn.) have not been tried. One of the main reasons is that onions are a long term crop, which normally take about 240 days from the time they are sown until they are harvested. This period is too long for one crop where there is such a shortage of land and where the growing of vegetables for the local market is so intensive. However in view of the considerable quantities of onions which are imported each year from Japan the Agricultural Division has been trying out different varieties of onions to see if the growing period cannot be reduced. Of the many varieties tried on different soils and at different seasons of the year it would appear that the Hybrid 'Granex', the seed of which was obtained from Asgrow Export Co., Milford, Connecticut, U.S.A. is very suited to climatic conditions in the Colony.

169. Trials carried out on the Government Experimental Station at Sheung Shui revealed the following information:

TABLE 16

CROP

Crop	Sowing	Trans-planting	Harvest	From sowing to Harvest	From trans-planting to Harvest	Seedlings in Nursery	Area Planted	Total Yield	Equiv. Yield per D.C.	Av. Price per catty	Remarks
1st	8.8.57	12.10.57	16.1.58	162	96	66	0.24 D.C.	434 cattles	1,808 cattles	23¢	1,808 cattles per D.C. = 14,464 lbs. per acre.
2nd	13.9.57	21.12.57	3.3.58	172	72	100	0.24 D.C.	212	883	18¢	—

170. From the above, it would appear that (i) the best time to sow onions in this Colony is from August to mid-September and that they should be harvested not later than February; (ii) the variety 'Granex' takes about 167 days from sowing to harvesting, which is about seventy three days earlier than any of the other varieties which have so far been tried; and (iii) the one hundred days required by this crop to mature after transplanting is about the same period required for growing tomatoes. Onions can be stored for a considerable time; sales can therefore be regulated.

171. There is a good demand for fresh onions and the price remains steady at about \$23 per picul.

(ix) *Sweet Potatoes*

172. Sweet potatoes are extensively grown in the Colony. During the years 1948 to 1950, many varieties were collected by the department from local sources and from abroad. The varieties (although they were not all true to type) numbered around 150. From 1950 to 1955 the number of varieties was reduced to sixty. During 1956 and 1957, forty seven of the most promising varieties were again tried out at the Ta Kwu Ling Agricultural Station. Of this number sixteen varieties showed outstanding results. Further trials will be conducted when it is hoped to reduce still further the number of varieties held by the department.

173. Sweet potatoes constitute a very good feed for livestock. A comparison of their composition as compared with maize is as follows:

TABLE 17

COMPARISON OF THE COMPOSITION OF SWEET POTATOES AND MAIZE

	<i>Sweet Potatoes</i>	<i>Maize</i>
	%	%
Cr. Protein	1.6	9.7
Cr. Fibre	1.9	2.3
Fat	0.4	4.0
Nitrogen free extract	26.4	71.0
Mineral matter	1.2	1.4
Water	68.5	11.5
Digestible Nutrients	26.7	83.7

174. This information indicates that sweet potatoes have about one-third of the nutrient value of maize and must be classed as a bulk feed. An average yield of ten tons of sweet potatoes is equal to an outstanding yield of thirty three bags per morgen of maize. Sweet

potatoes must be fed with a supplementary concentrate mixture (approx. 2 lbs. concentrates per day). It requires 4 to 5 lbs. of sweet potatoes to equal 1 lb. of maize.

175. Ten pigs can graze for approximately one week on an area 25×30 yards. Sweet potato vines are extensively used by farmers for feeding pigs. As reported elsewhere it is proposed to carry out experiments on the feeding of pig stock at Ta Kwu Ling providing bulk feeding stuffs from the agricultural areas of the station.

(x) *Cultivation of Vegetables at Higher Altitudes*

176. Owing to limited land space and the very intensive way in which vegetables are cultivated in this Colony it has been necessary for the Agricultural Division to explore the possibilities of utilizing land at higher altitudes for the production of vegetables. Some kinds of vegetables, particularly local varieties such as white cabbage (Paak Choi), Chinese flowering cabbage and sweet potatoes, can be grown during most seasons of the year. Other kinds such as cabbage, cauliflower, broccoli, khale, lettuce, tomatoes, peas and beans can only be grown during the winter months i.e. from October to March.

177. By utilizing land at approximately 1,000 to 2,000 feet above sea level it is possible to extend the growing period of summer crops for about two months. The importance of this time factor can be appreciated when the daily reports on market values of vegetables are studied. Another important consideration is the kinds of vegetables produced to suit local requirements.

178. Steps were taken by the department some years ago to try out vegetable cultivation at 2,000 feet on Tai Mo Shan. Owing to wet foggy conditions growth of vegetables at this height were not uniformly successful. Fodder crops, tea, strawberries and certain hardy fruit trees are doing well at this elevation. Since then observations at Pak Ngau Shek on the Kadoorie Farm where old terraces have been rehabilitated at 1,500 feet show that the growth of certain vegetables can be extended for two months. Opportunity has been provided to allow experimental work to be undertaken at this elevation and for the division to set up a few vegetable plots at an abandoned forestry outpost at an elevation of 1,000 feet. Of interest from the soil report is the depth of soil often encountered at high elevation.

(xi) *Tests on Insecticides and Fungicides*

179. As opportunity permits tests are made on agricultural stations of the efficiency under local conditions of insecticides and fungicides. During the year under review eleven products from seven firms were tested at Castle Peak and elsewhere. The results of this work is summarized at Appendix 1 Table K.

PART 3

SPECIAL PROJECT—SOIL SURVEY

Officer-in-charge: Mr. C. J. Grant, M.A.—Soil Survey Officer

180. The Soil Survey of Hong Kong was begun in October 1956 and the field work is now nearing completion. Mapping, analysis of soils and interpretation of analytical data will take a further twelve months. At this stage it is possible to review the work done and to make a provisional report on the soils and to draw attention to the implications of present information on farming methods and improvements in land utilization.

PURPOSE OF THE SOIL SURVEY IN HONG KONG

181. The guiding principle of the Soil Survey has been that it should provide a basis on which the staff of the Department of Agriculture, Fisheries and Forestry may plan field experiments to seek improvement in management and fertilizer treatments. There are many possible methods of classification of soil types but in Hong Kong an attempt has been made to derive a classification which will be readily interpreted in terms of soil productivity. In soil survey there is a temptation to indulge in a multiplicity of soil series to cater for all of the many variations in soil characteristics but the wood is soon obscured by the trees and the map becomes meaningless to everyone other than the soil scientist. In order that the soil pattern may be interpreted by agriculturalists and others interested in land utilization the number of soil series has been as strictly limited as accuracy will allow, and the classification has been based on the soil characteristics which are closely related to land use.

CLASSIFICATION OF THE SOILS

182. For classification purposes the soils have been broadly separated into (*a*) arable and (*b*) upland. The arable soils, which occur in valleys and basins are largely alluvial and have all been affected by a long history of rice cultivation. Though many of the lighter soils are now being cropped to vegetables, all of the arable area may be considered as rice soil. The most important soil characteristics in a rice soil are texture and water supply so that these factors must be mapped.

In point of fact, by use of a classification based on the parent material of the soil and its drainage features, rice soils are suitably differentiated and in vegetable areas reliable productivity indices may be readily derived. The resultant map is however somewhat complicated and for ease of reference maps are also being prepared showing each factor separately.

183. Afforestation is the only suitable land use in the upland area and soil factors which should be considered are relief, structure, composition and natural vegetation. In view of these different requirements the hill soils are classified on their parent material and geomorphological situation. Thus they are considered as either skeletal, 'in situ', colluvial, boulder fan or alluvial cone soils.

PROGRESS OF SURVEY IN 1957/58

184. Using the classification outlined above the soils of Hong Kong have been mapped on a scale of 1/20,000 with the aid of aerial photographs. All of the agricultural soils of the Colony have now been surveyed and a composite map is being drafted. One or two areas require revision, notably Laffans plain and a small area of saline soil near Ha Tsuen, but the pattern of the agricultural soils is complete. Some of the more important soil associations and series are described below.

(i) *Chek Nai Ping Association*

185. This is the most productive as well as one of the most extensive soils in the Colony. Though first discovered at the village of Chek Nai Ping near Tai Po, this soil occurs also in all of the main agricultural areas notably at Kam Tin, Fan Ling, Sheung Shui, Yuen Long and Tung Chung on Lantau.

186. 'Chek Nai Ping' is an alluvial soil derived from rocks of the Tai Mo Shan Porphyry series and is characterized by a silt loam texture, well developed prismatic structure, no stones and very few quartz grains greater than 1 m.m. in diameter. The Association is represented in all of the drainage series but the imperfectly drained series is dominant. When cropped to rice the imperfect and poorly drained series of this Association yield 300 - 400 catties per dou chung.

187. A typical profile for the imperfectly drained series of the Chek Nai Ping Association is as follows:

0 - 6" 10YR 4/3 (brown) Silt loam, weakly platy merging to angular blocky structure. Rusty mottling along root channels. pH5.6

- 5 - 10" 7.5YR 5/6 (strong brown) Silty clay loam, prismatic, marked compaction at top of horizon with strong Fe and slight Mn accumulation. pH 6.7
- 10 - 20" 10YR 4/2 (dark grey brown) Clay loam, large prismatic structure. Roots along prism faces. pH 6.59
- 20 - 32" 10YR 5/6 (yellowish brown) Clay loam, prismatic. pH 6.4
- 32" + 10YR 6/3 (pale brown) Sandy clay loam, massive, large Fe and Mn stains, marked increase in number of quartz grains. Roots penetrate to more than 40". pH 6.28

188. Notable features of this soil are the relatively high pH throughout and the coarser grains at the base of the profile.

(ii) *Mai Po Association*

189. The Mai Po soils are very similar to those of the Chek Nai Ping Association though they are neither so extensive nor so productive. Rice yield is 200-350 catties per dou chung on this soil which is found most extensively at Mai Po, Sheung Shui and in the pockets of agricultural land along the border from Lok Ma Chau to Lo Wu and Ta Kwu Ling.

190. Basically Mai Po soils may be described as Chek Nai Ping soils with a fine sand rather than a silty texture. There are however other differences more noticeable in laboratory analysis than in field identification that justify separation of this Association.

191. Mai Po soils are colluvial and alluvial materials derived mainly from rocks of the Lok Ma Chau formation but affected also by Tai Mo Shan porphyries. This Association is dominantly represented by the freely drained series which provides excellent vegetable soil if the fields can be irrigated but rice is grown only on the poorly drained and very poorly drained series.

192. A typical poorly drained profile is described below:

- 0 - 5" 10YR 3/2 (very dark grey brown) Fine sandy loam, angular blocky structure, good root mat, rusty staining along root channels. pH 4.93
- 5 - 12" 10YR 5/6 (brownish yellow) Fine sandy loam, compacted, prismatic structure, clay and roots, along structure faces strongly mottled. pH 4.05
- 12 - 32" 7.5YR 4/0 (dark grey) Sandy loam weak prismatic structure, compact. pH 3.00
- 32" + As above but increasingly coarse sand fraction. pH 2.72.

193. It will be noted that the pH values are considerably lower than in the Chek Nai Ping Association.

(iii) *Fan Ling Association*

194. Fan Ling soils are the most easily recognized in the Colony being all very dark brown to black and frequently underlain by white quartz sand. This Association may be seen in the Fan Ling, Yuen Long, Laffans Plain and Ping Shan districts, frequently occurring in small pockets. The Fan Ling Association soils are formed in the areas which remained as mangrove swamp when the alluvial areas of the Colony had newly emerged from the sea. Marked acidity is a diagnostic feature of this soil and the consequent strong leaching often results in a form of intense podsolisation and formation of horizons of very pure silica sand. There are no freely or imperfectly drained series to this Association.

195. The profile below is a poorly drained series of the Fan Ling Association as it occurs in Sheung Shui Agricultural Station.

- 0 - 4" 10YR 3/2 (very dark grey brown) Sandy clay loam, angular blocky, mottled, poorly developed roots.
- 4 - 8" 10YR 4/2 (dark grey brown) Silty clay loam, very compact angular blocky, no roots.
- 8 - 15" 10YR 3/2 (very dark grey brown) Clay loam, angular blocky with very dense clay peds.
- 15 - 23" 10YR 2/2 (very dark brown) Silty clay, black, dry, dense clay peds, some rusty mottles.
- 23" + Yellowish white sand.

196. The reaction figures for this profile have not been given because the soil has been treated with lime and fertilizers, but elsewhere pH values as low as 2.3 have been obtained in soils of this Association. Rice is not grown extensively on this soil (100 - 150 catties per dou chung). But vegetables may be grown successfully if the sandy surface horizon is well supplied with water for there is a good supply of plant nutrients locked up in the clay subsoil.

(iv) *Castle Peak Association*

197. Red soils which are derived from red clay beds of the Lok Ma Chau formation and the lateritic formations in the Colony are designated Castle Peak Association. These occur in Castle Peak, Kam Tin, Ping Shan and Sheung Shui. Good crops of rice are grown on this soil and yields of 250 - 350 catties per dou chung are obtained though if the soil is saline an unfavourable structure (Sodium clay) develops and poor crops result. Frequent quartz fragments and iron concretions are often found in this soil but the layer of concretionary nodules seems to vary from area to area with little regard for drainage or other visible morphological reason. The whole range of drainage series is represented

by this soil but in the poorly drained and very poorly drained series there is of course considerable modification of the iron content.

198. A typical profile is as follows:

- 0 - 1" 10YR 5/4 (yellowish brown) Sandy clay loam, platy to crumb texture, quartz fragments, surface bakes hard between plants.
- 1 - 5" 5YR 5/6 (yellowish red) Loam, angular blocky to prismatic but fine crumb along root cracks, strong development of roots along prism faces, faint orange mottling.
- 10 - 22" 2.5YR 5/8 (red) Clay loam, weakly prismatic, dense and hard, roots only along prism faces. Occasional yellow mottling associated with koolinised stones.
- 22" + 10YR 5/8 (red) Clay similar to above in all respects but with larger mottles. No roots.

199. The reaction of this soil is constant throughout the profile at pH 5.3 - 4.9. The Sun Hing Association is very similar to that of Castle Peak but differs in that Sun Hing textures are coarser and the reaction is more acid ranging from 3.5 - 4.5. Vegetables may be grown on this Sun Hing Association soil but heavy liming is necessary.

(v) *Sha Tin Association*

200. Soils developed on granitic alluvium are sandy, very acid, low yield (100 - 200 catties per dou chung) and frequently a strong iron pan develops. Vegetables and flowers are grown very successfully on this soil if there is plenty of water available and liberal application of fertilizer. Sheung Shui Association is very similar but the soils of this latter Association are of marine rather than fluvial origin. Laboratory investigation on these Associations are in progress and further description must be deferred until these analyses are completed.

201. From the brief descriptions given above some impression of the diversity and distribution of the soils may be obtained but now that survey and identification of the Associations has been completed further processes are involved, such as (a) mapping, (b) analysis and (c) interpretation.

202. Mapping of the soils on a scale of 1/25,000 is in progress and should be completed within the next few months, though revision of small areas and re-examinations of intermediate soils is still required. A new set of aerial photographs has considerably helped in mapping of hill areas and the Wild stereoscope which was received in March, is an indispensable aid to interpretation.

203. The soils laboratory is now fully equipped and more than three hundred samples have been analysed. A complete range of soil analyses is undertaken as may be seen from the list below.

- (a) pH.
- (b) Texture.
- (c) Base Saturation.
- (d) Exchangeable cations; Ca, Mg, Na, K, H.
- (e) Total exchangeable bases.
- (f) Cation exchange capacity.
- (g) Carbon; Nitrogen; Carbon/Nitrogen ratio.
- (h) Total and available P_2O_5 .
- (i) Readily soluble K_2O .
- (j) Total soluble salts.
- (k) Anions Cl^- , SO_4^{--} , CO_3^{--} , HCO_3^{--} .
- (l) Iron, Manganese, Aluminium.
- (m) Boron.
- (n) Silica/Sesquioxide ratio.

204. Silicate analyses have not yet been carried out but in view of the importance of laterisation as a soil process in Hong Kong it has been decided the Silica sesquioxide ratios must be established and the necessary platinum crucibles have been ordered. The laboratory is thus equipped for a large range of investigations and is available for the use of the whole department.

205. Interpretation of soil analysis and a report on the soil pattern of Hong Kong will inevitably take some time to complete but certain features have emerged and are being investigated by the department e.g.

(a) *Soil types*

Experiments on response of rice on the more important soil series has begun and the department has rented representative fields throughout the Colony for a programme of field experiments.

(b) *Fertilizers*

- (i) Because of acidity and the change of accumulations of the sulphate radical in the soil it has been recommended that in certain areas Ammonium Sulphate should be replaced by Urea.

- (ii) Nitrogen has been found to be excessively low in almost all of the soils investigated and a heavy application of lime and organic matter (nightsoil, compost, or farmyard manure) is recommended.
- (iii) Particularly high figures for available phosphate have been recorded in Sheung Shui Agricultural Station so it is suggested that dressings of superphosphate might be dispensed with for a period.

LAND UTILIZATION

206. Because of the close relation between soil survey and land use it has been decided that the Land Utilization Team of the Agriculture, Fisheries and Forestry Department should work with the Soil Survey Section. The work of the Land Utilization Team is concerned with the mapping of existing land use, assessment of land and crop values and the investigation of areas suitable for agricultural resettlement.

207. The department carried out a complete survey of farming in the Colony a few years ago and Dr. Tregear of Hong Kong University has produced an excellent account of the Land Utilization but there have been considerable changes in recent years and the economy of many of the farmers is changing rapidly. The land use survey must therefore be kept up to date and related to the development of a sound agricultural economy. Change over from rice to vegetables and the increase in dry land crops is a reflection of the soil pattern and the combination of Land Utilization Survey and Soil Survey forms the basis of land assessment for resettlement or development.

PART 4

ANIMAL INDUSTRIES DIVISION

Officer-in-charge: Mr. D. M. Corbett, M.R.C.V.S.—Senior Veterinary Officer

GENERAL

208. The Animal Industries Division continued to extend its activities with the aim of increasing the production of livestock and their products. The methods by which this increase is being brought about are:

- (a) effective control of disease;
- (b) improving animal husbandry practices, i.e. breeding, feeding, and management of livestock and the effective utilization of available feeding stuff;
- (c) making available to farmers improved strains of livestock and
- (d) improving the quality of livestock products.

209. All sections of the division participate in educational work in the normal course of their duties, but officers of various grades are also called upon to lecture to organized student classes, co-operative groups, village meetings, and to the general public through the medium of Radio programmes.

210. The Senior Veterinary Officer is administratively responsible for the division and personally undertakes control of the importation and movement of livestock, and the exportation of animals and animal products. Certain aspects of advisory and extension work are also under his direct control.

LIVESTOCK CENSUS

211. No census of the livestock population has been taken since 1956 but records of animals slaughtered and vaccines used indicate a considerable increase in numbers, especially in pigs. This has occurred despite inclement weather conditions, and a decrease in financial returns.

DISEASE CONTROL

212. Comparative statistics of disease investigations by officers of the division are:

TABLE 18

<i>Type of Animal</i>	<i>No. of Outbreaks</i>		<i>Nos. Involved</i>	
	<i>1956/57</i>	<i>1957/58</i>	<i>1956/57</i>	<i>1957/58</i>
Pigs	1,428	3,579	5,828	16,756
Cattle	194	250	539	615
Buffaloes	6	22	21	49
Fowls	115	605	85,000	34,889

(i) Foot and Mouth Disease

213. With ever increasing imports of slaughter stock and inadequate quarantine facilities, measures adopted to prevent the introduction and spread of Foot and Mouth Disease cannot be effective. During the year, 403 animals were totally condemned in the urban slaughter-houses because of Foot and Mouth Disease. The affected cattle came from the following sources:

TABLE 19

<i>Source</i>	<i>Numbers</i>
Mainland China	293
Thailand	33
Cambodia	68
Vietnam	5
Local	4

214. In December the disease was diagnosed in cattle at the Dairy Farm, Hong Kong and specimens from affected cattle were sent to Pirbright for typing of the causal virus, which proved to be Type Asia I. Although not resulting in a high mortality, it caused severe losses through a sudden reduction in the milk yield, and general loss in condition of the animals. Strict quarantine was imposed on the Farm, and, as the outbreak coincided with an increase of infection amongst imported cattle in the abattoirs, all movement of livestock from urban depots to the New Territories was prohibited. As there is no effective vaccine for this type of infection, the disease ran its course. By the end of March the outbreak had subsided and the quarantine was lifted. It is noteworthy that although the large herd of swine on the Dairy Farm was in close contact with the cattle only six pigs became infected.

215. In the New Territories, forty four outbreaks involving 397 cattle, and twenty three outbreaks in pigs involving 305 animals were

reported. All cases were due to Type O until January when Type Asia I appeared to Shan Ha, and was subsequently identified in five outbreaks. Fortunately the disease continues to run a mild course in local stock.

216. During the year ninety one specimens were sent to the United Kingdom for typing and reports received were as follows:

TABLE 20

		<i>Specimens Dispatched</i>	<i>Type A</i>	<i>Type O</i>	<i>Asia I</i>	<i>Negative</i>
Mainland China ...	...	18	1	2	11	4
Cambodia ...	...	15	—	1	12	2
Thailand ...	...	8	—	2	4	2
Hong Kong ...	...	50	—	13	10	27

217. Until a vaccine is produced which will give protection against Type Asia I, effective quarantine is the only preventative measure which can be economically adopted.

(ii) *Rinderpest*

218. No case of Rinderpest was reported during the year, making the 8th consecutive disease free year. Animals inoculated against this disease totalled 9,906, an increase of 1,443 over the previous year.

(iii) *Tuberculosis*

219. During tuberculin testing of the Colony's dairy cattle twenty three reactors were discarded. No generalized cases were found on post mortem examination, and the disease can be considered as completely under control.

(iv) *Ephemeral Fever*

220. During the year only four cases were reported involving four animals, as compared with 258 cases in the previous year. This decline may be due to the high degree of immunity acquired during the 1956/57 epidemic.

(v) *Anthrax*

221. No case of Anthrax was reported apart from those which occurred in quarantine or were diagnosed in carcasses on board ship.

(vi) *Swine Fever*

222. There was a marked increase in the number of outbreaks reported. 163 outbreaks affecting 1,077 animals were investigated.

Although these resulted in only fifty nine fatalities, the economic loss through the growth of affected animals being retarded is of major importance. All these outbreaks were in uninoculated animals. During the year 16,580 animals were inoculated by divisional staff an increase of 2,080 over last year. The use of vaccines sold by private firms is also increasing, especially amongst the more advanced pig raisers. A total of 918 cases were discovered in quarantine stations and slaughter-houses.

(vii) *Swine Erysipelas*

223. Ten outbreaks of this disease were reported, all affected animals responded well to treatment.

(viii) *Virus Pneumonia of Pigs*

224. This condition was very prevalent and 513 outbreaks involving 1,522 animals were investigated. Officers continued to emphasize the importance of good husbandry in preventing this disease.

(ix) *White Scours*

225. During the year 9,045 outbreaks with 9,201 animals affected were visited. Pig farmers now realize that early reporting of the disease is necessary, and effective treatment was carried out in most cases and only eighty one deaths were recorded. As present staff is inadequate to cover all cases, a simple prescription which can be used without danger has been issued to the larger breeders and co-operative societies.

(x) *Gastro Enteritis of Pigs*

226. This remains the most common complaint in adult pigs, 538 outbreaks involving 2,001 animals being reported and treated. Of these only twenty five deaths were recorded.

(xi) *Newcastle Disease of Poultry*

227. Sixty two outbreaks involving 12,511 birds were reported during the year and resulted in a high mortality rate of 7,650. All these outbreaks occurred in uninoculated flocks. During the year the department imported for use in the Colony 553,550 doses of Weybridge 'F' Strain Vaccine from Thailand and 3,574,000 doses of Ranikhet Vaccine from Malaya. Officers of the department inoculated 1,242,500 birds with Ranikhet Vaccine and issued 2,331,500 doses for use by the farmers themselves. The 'F' Strain Vaccine is always administered by the farmers themselves.

(xii) *Pasteurellosis of Birds*

228. Thirty nine outbreaks of this condition with 2,441 birds affected were reported for the year. Mortality was very high.

(xiii) *Avian Leucosis Complex*

229. The incidence of this disease increased and thirty nine outbreaks involving 3,405 birds were reported. Mortality remained low due to early culling, on departmental advice.

(xiv) *Coryza of Fowls*

230. Coryza was prevalent during the year and 144 outbreaks involving 7,124 birds were reported.

(xv) *Fowl Pox*

231. During the year thirty six outbreaks were reported in which 1,637 birds became affected.

(xvi) *Coccidiosis*

232. Fifty five outbreaks were quickly brought under control by the early treatment of some 3,040 birds.

ANIMAL HUSBANDRY AND RESEARCH

General

233. Research on diseases has been combined with Animal Husbandry as the two subjects are closely related, and staff are not available to create a pure research section. There are however many disease problems which require detailed study and this is being undertaken to a limited degree as opportunity affords. Progress made in teaching better methods of husbandry has been slow, as economic stability is necessary before the peasant farmer will make any drastic change in his present backward methods.

(i) *Pigs*

234. Only when they are assured that the reward will justify the expenditure will the small pig farmer construct modern pig sties and adopt advanced feeding practices. Much is being done to improve pig husbandry by the provision of loans under the K.A.A.L.F., and the ubiquitous village sow, foraging with her few stunted offspring, is very gradually being replaced by an improved type of pig kept under somewhat better conditions.

235. Even those farmers who are willing to change their methods still consider the margin between profit and loss too narrow to expand their business, and with the present uncontrolled imports this will remain so, unless a system of marketing with a guaranteed price can be evolved. To this end officers of the division are collecting data on marketing methods and price variation.

236. The exotic pig is very popular with all farmers and butchers, and requests for breeding stock are received almost daily. So far exotic stock produced on Government farms have only been issued to selected farmers whose methods of management and feeding ensure that the animal will survive, and that details of the animal's performance will be available to the department. With the establishment of multiple pig units under the K.A.A.A. Widows Scheme there will be much greater scope for the use of improved boars under department control. Information recently acquired on methods of Artificial Insemination in pigs used in Japan, and the training of a member of the staff in those methods, also promises a much quicker and safer route to make improved stock available in greater numbers. To build up present stocks and to introduce new blood a number of Middle White pigs have been purchased in Japan.

(ii) *Poultry*

237. The poultry industry has as usual had a varied career. At times it appeared that many of the major producers would close down as the price of cockerels dropped to \$1.80 per catty and imported eggs at \$1.00 for eight overwhelmed the market. However seven of the leading hatcheries still produced a total of 2,315,000 chicks between them. During the period January to March, 700,000 hatching eggs were ordered from the Mainland and the season for the hatching of local eggs is yet to come.

238. Poultry research undertaken by the department is mainly concerned with production of an early maturing bird which will be ready for the table at three months of age and yet suit the local taste. The crossing of various breeds with the local Cantonese, and the selection of improved laying strains continues at Castle Peak Agricultural Station.

GOVERNMENT STOCK

(i) *Pigs*

239. The main herd of local pigs was kept at Castle Peak Agricultural Station with sub-sections at Tsuen Wan and Sha Tin

Stations. These animals were sold to the general public directly and through K.A.A.A. for breeding purposes and for rearing. A total of 418 of these pigs were sold during the year, 230 of which were sold through K.A.A.A.

240. The herds of Berkshire and Middle White pigs at Sheung Shui Pig Station continued to do well. In June two Large White pregnant sows and three Berkshire pregnant sows were imported from England and established at Sheung Shui Pig Station. During the year thirty high grade exotic breeding stock were issued to farmers for specialized breeding. Careful records of these animals are being kept for assessment purposes and periodic blood tests are taken for checking the presence of *Brucella suis*. Up to date there has been no positive reactor. Six Middle White and six Berkshire gilts together with Berkshire and Middle White boars were transferred to Castle Peak Pig Station to establish herds of exotic animals for distribution and educational purposes.

241. At Sai Kung Station considerable progress has been made in the feeding and breeding experiments using local type females and Berkshire and Middle White males. Both types of exotic crosses yielded a very satisfactory type of animal, the females of which have been retained and back-crossed to Berkshire, Middle White and Native boars to compare the resulting crosses.

242. Plans are being made to establish a new pig breeding centre at the new station at Ta Kwu Ling. Here also various fodder crops will be tried out under dry land farming conditions, with a view to the better utilization of this type of country, and supplementing locally produced feeding stuffs.

(ii) *Cattle*

243. Twenty four local brown cattle and twenty one buffaloes are maintained by the department for working purposes. They are distributed at the various stations but the reserve herd of cattle is kept at Castle Peak and the reserve herd of buffaloes at Sai Kung. During the year three brown cattle calves and one buffalo calf were born. One brown cow and one buffalo died. One buffalo was discarded due to a broken nose.

(iii) *Sheep*

244. During the year the recently acquired flock of sheep for laboratory purposes did not do well. They were marooned on Tai Mo

Shan during the floods in May/June and as a result many died. Post mortem examinations revealed extremely heavy old standing infestation with liver fluke, probably acquired in their native China, which had resulted in gross liver damage. They were immediately transferred to Castle Peak Pig Station and with good nursing and feeding, improved considerably. There are now sixteen ewes on Castle Peak Station.

(iv) *Poultry*

245. There was no serious outbreak of disease among Government poultry and mortality was remarkably low. It was decided that the poultry policy should be broadened, and in addition to the White Leghorns, flocks of other representative breeds, such as New Hampshire, Barred Plymouth Rocks, Brown Leghorns, Mikoya and Wei Chow were introduced for demonstration and cross breeding purposes. Work on the improved Cantonese bird was expanded and a foundation stock for experimental crossing of the improved Cantonese was acquired. In view of the proposed need for specialized eggs for vaccine production it was decided to build up the White Leghorn flock to 500 pullets. Selections from the best birds on the Station were made and incubation started in January. To meet the demands of this expansion the disused brooder was transferred from Sheung Shui Station to Castle Peak Station and put into operation. All the poultry are at present given Newcastle Disease Nasal Drop Vaccine at one day old, Ranikhet Vaccine at four to six weeks old and vaccinated against Fowl Pox at three to four months old.

Education

246. The most valuable form of educational work is perhaps carried out by officers in the field, who have won the confidence of the peasant farmer by giving advice and treatment in cases of sickness in his livestock. An approach is also being made to the younger generation through lectures to organized classes. Co-operative societies are showing great interest in lectures by members of the staff. Educational work by the Veterinary Officer also extends to lectures to Health visitors on animal diseases communicable to man, and to students taking Meat Inspection and Tropical Hygiene Courses. The Senior Veterinary Officer also acts as examiner for the Royal Society of Health.

DISEASE CONTROL REGULATORY SECTION

Rabies

247. The Colony remained free from Rabies for the second consecutive year. There are now ten Dog Inoculation and Licensing Centres in the Colony, and in addition, three Mobile Units cover the more remote areas. This coverage is given so that dog owners will be put to the least inconvenience in conforming with the legislation. The Dog Control Unit assisted for a period in the licensing and inoculation work in the resettlement areas and also collected stray animals which were impounded until claimed by their owners.

248. There is a continual movement of dogs and cats to and from Hong Kong from all parts of the world and requests for information regarding the conditions of importation are received daily. To relieve staff from dealing with these individual queries, a summarized version of the legislation and some helpful notes were distributed to all shipping and air lines, and all foreign consulates for their information.

249. During the year 10,310 dogs were licensed and inoculated, and 6,333 licensed only, making a total increase of 720 over last year's figure. Further statistics are given at Appendix 1 Table N.

QUARANTINE OF ANIMALS IMPORTED FOR SLAUGHTER

General

250. With the periodic overcrowding due to uncontrolled imports, the Quarantine Enforcement Team battled against heavy odds. It is now proposed to establish a quarantine station on Ma Wan Island. This would be used for slaughter cattle imported from Mainland China, Thailand and other East Asian countries, when the abattoir lairages cannot hold them.

251. As it would be impossible to deal with Australian range cattle in the present abattoirs, a company interested in importing Australian cattle has been given permission to build a quarantine station and slaughterhouse on Lamma Island. Such a source of fresh beef will be most welcome in the Colony, and as regular shipments will be possible the price of meat should be stabilized.

252. As mentioned elsewhere, there was during December, an increase in the incidence of Foot and Mouth Disease in the quarantine lairages. The prohibition of movement of cattle between depots, and to the New Territories abattoirs, combined with slaughter of affected

and incontact stock, brought the disease under control, and the position was normal by the end of March.

253. Swine held for slaughter did not present any great problem as they are killed very soon after arrival.

254. Scheduled diseases diagnosed in Quarantine Stations and Slaughterhouses were as follows:

TABLE 21

<i>Disease</i>			<i>Swine</i>	<i>Cattle</i>	<i>Goats</i>	<i>Total</i>
Tuberculosis ...	...	...	268	187	—	455
Swine Fever ...	...	...	918	—	—	918
Foot and Mouth ...	...	...	—	403	—	403
Anthrax ...	...	...	—	8*	1	9

* Seven of these were dead on arrival. One case diagnosed after slaughter.

255. There was an overall increase in cattle and swine admitted for slaughter. Comparative totals were:

TABLE 22

URBAN AND N. T. SLAUGHTERHOUSES

	<i>Cattle</i>		<i>Swine</i>		<i>Goat & Sheep</i>	
	<i>1956/57</i>	<i>1957/58</i>	<i>1956/57</i>	<i>1957/58</i>	<i>1956/57</i>	<i>1957/58</i>
Imported...	73,371	92,874	503,627	611,333	12,060	12,097
Local ...	4,568	3,596	226,940	249,944	—	—
Total ...	<u>77,939</u>	<u>96,470</u>	<u>730,567</u>	<u>861,307</u>	<u>12,060</u>	<u>12,097</u>

256. Comparative figures for 1954/55 emphasize the rapid increase especially in beef consumption.

TABLE 23

URBAN SLAUGHTERHOUSES

<i>1954/55</i>					<i>Cattle</i>	<i>Swine</i>
Imported ...	...	...	...	...	44,308	535,778
Local ...	...	...	...	...	1,122	67,052
Total ...	...	...	...	...	45,430	602,830
N.T. Estimates ...	...	...	...	...	1,122	40,000
Total ...	...	...	...	...	<u>46,552</u>	<u>642,830</u>

257. There is no doubt that unrecorded slaughtering of pigs for home consumption in the New Territories has increased correspondingly. For further details see Appendix 1 Tables R, S & T.

258. Officers of the Quarantine Enforcement Team continued to escort imported animals from the point of entry at Man Kam To to the urban slaughterhouses, and also any movement from urban to N.T. abattoirs. They also boarded 120 vessels transporting some 43,000 pigs and 31,250 buffaloes from Taiwan, Thailand and Cambodia involving the checking of some 130 Import Permits and Veterinary Certificates from the port of origin. Mortality during sea transportation averaged approximately 1.2%.

259. Several cases of illegal slaughter were discovered and the offenders brought to court. Overseers of the division, under the supervision of the Senior Livestock Supervisor, were responsible for the quarantine and inspection of stock at Tai Po and Yuen Long Slaughterhouses. A total of 4,795 cattle, 67,861 pigs, nine goats and seven horses and mules were inspected. This is an increase of 1,127 cattle and 4,486 swine over the previous year. Of these, local swine increased from 47,677 to 61,027 and imported swine decreased from 15,646 to 6,834.

Dairy Inspection

260. Apart from the Dairy Farm in Hong Kong and a few other passable premises in Kowloon the standard of milk production is very poor. As the demand for fresh milk increases so do requests for extension of present premises. It has now become a matter of urgency that new sites outside the urban area be set aside for dairy farming, and that the occupants of dairies in the Diamond Hill area be given every encouragement to move to more suitable locations where hygienic premises can be built. A survey of possible extension areas has already been made and some of the more advanced dairymen are keen to move. It is hoped that land will be made available and that the present unsatisfactory buildings will gradually give way to the already encroaching industries.

Inspection of Animals and Animal Products

261. A considerable amount of time was spent by the Senior Veterinary Officer and clerical staff on this work. Many of the items examined were not of Hong Kong origin but were imported for re-export. Such diversified objects as feathers and an elephant were the subject of inspection and certification. Details of this work are summarized at Appendix 1, Table M.



Figure 1: Improved Local Sow.

Figure 2: Selected Middle White Boar.





Figure 3: Progeny from Cross of Figures 1 & 2.

Figure 4: Selections from Figure 3 for breeding.



Trade

262. There was a plentiful supply of cattle for slaughter throughout the year with a fairly stable price ranging from \$190 to \$220 per picul dressed weight. The numbers slaughtered and the production of animal by-products reached a record level. Pigs were also in good supply and although the price to local producers dropped as low as \$140 per picul live weight, the price to the butcher varied from \$170 to \$230.

263. There was the usual seasonal variation in poultry and egg prices. Leghorn grade A eggs ranged from \$3.00 to \$4.50 per dozen whilst local eggs from the Mainland were \$1.00 for eight against \$2.00 per dozen for the local product. Local day-old chicks cost \$0.60 each and exotics \$1.00 each. Local table birds fetched \$1.80 - \$2.20 per catty with a rise to \$3.00 at the Chinese New Year Festival. Capons made \$3.00 to \$4.50. Pullets cost \$3.00 to \$4.50. Ducks \$1.90 and geese \$2.20 per catty.

PART 5

FISHERIES DIVISION

Officer-in-charge: Mr. W. D. Orchard—Fisheries Officer.

I. MARINE FISHERIES SECTION

Introduction

264. The division is concerned with fisheries administration and extension work. Promotion of mechanization, development of better fishing boats, training of fishermen for Marine Department certificates of competency as masters and engineers, together with the introduction of new fishing methods, are the main considerations on the marine side.

265. The fresh-water and oyster culture section maintains close contact with local pond fish and oyster farmers to whom advice is given and, where possible, improved methods of culture are demonstrated.

REVIEW OF FISHING ACTIVITIES

Trawler Company Vessels

266. Throughout most of the year, a total of nine pairs of local company-operated Japanese-type 'Bull' trawlers worked mainly in the Gulf of Tongking and around Hainan Island. Their seasonal fishing grounds are shown in the map at Appendix 3.

267. These company-operated vessels landed 93,688 piculs of fish (much of which was Red Snapper destined for the quick-frozen export trade), as against 64,701 piculs during the previous year. A table showing month-by-month landings from the four main different categories of vessels, together with figures for the previous year, is at Appendix 1 Table X.

Junk Trawlers

268. The mechanized 'deep sea' junk trawlers did not fish beyond the seventy fathom line (as they had done during the two previous years), because good catches were taken in between fifty to sixty five fathoms. During the summer months (i.e. the typhoon season) many of these junks were forced to fish the inshore waters just south and south-west of the Ladrone Islands, with poor results. A map illustrating the seasonal fishing grounds of these trawlers is at Appendix 4.

269. The sailing 'deep sea' junk trawlers fished their usual grounds up the coast from the Ladrone Islands to Ping Hoi, in twenty eight to thirty three fathoms. They did not do well during the first and last quarters of the year on account of lack of wind.

270. Mechanized inshore trawlers enjoyed good conditions during the first quarter only, after which poor Head Grunt and Hair Tail seasons, followed by the new restrictions enforced by the Chinese authorities, adversely affected their operations.

271. Mechanized shrimp trawlers had good results during the first half of the year, but the poor winter season for White Shrimp and the China Mainland restrictions on fishing grounds later made conditions most difficult.

Long Liners

272. Despite periodical difficulties experienced in getting bait, the usual interference from sharks and puffer, and a shortage of ice supplies during the summer, the large 'deep sea' long liners had a good year. All of these boats are mechanized. A map showing the main fishing grounds working by these boats during the year is contained at Appendix 5.

273. The mechanized Conger Pike long liners, fishing mostly in eighteen to twenty four fathoms south-west of the Ladrone Islands, did very well in the early part of the year only. For the rest of the time the yield of Conger Pike was lower than usual and there were difficulties in obtaining bait.

274. Both the mechanized and sailing small long liners which mainly fish for Head Grunt, Croaker and Hair Tail around the nearby Lamma Islands had a reasonable year. More and more of these boats went over from long lining to using monofilament nylon gill nets, with which they had good catches of Pomfret, White Herring and Mackerel during their respective seasons.

Purse Seiners

275. It was a fair year for the 'bright light' purse seine net boats. Anchovies were abundant during April and May, then reappeared in large quantities again in November. The Carangoid season was normal, while unusually large quantities of Golden Sardines were taken from September to November.

276. The mechanized Cheung Chau based purse seiners worked gill nets for Yellow Croaker during the season, but with disappointing results.

277. The large mechanized purse seiners had good catches of Mackerel Scad during January, February and March, but, unfortunately, prices were low in Hong Kong.

Pa T'eng

278. The Pa T'eng boats had a fairly good year using purse-seines for the capture of Mackerel Scad, Golden Sardine and Carangoid, together with nylon gill nets for White Herring and Mackerel.

279. The Yellow Croaker season was once again a failure and only those boats which fished up the East coast, near Ping Hoi, had good catches.

280. During the summer months, many of the mechanized Pa T'eng turned to shrimp beam trawling, with favourable results.

'Big Tail' Junks

281. The Yellow Croaker season, main fishery for the Tai O based 'Big Tail' junks and the small gill netters, was a failure. Fortunately, they had good catches of White Herring, Thread Fin, Pomfret, Mackerel and Macau Sole by using nylon gill nets.

282. Large quantities of the minute 'Silver Shrimp' (*Acetes dispar*-Hansen and *A. japonicus*—Kishinoya), used in the manufacture of shrimp sauce and paste, were taken by the small gill netters using 'push nets' during the first half of the year.

Fishing Community and Fishing Vessels

283. A record of the number and type of fishing vessels in port over the Chinese New Year, together with an estimate of the population actively engaged in fishing, is contained at Appendix 1 Table Y. These figures are based on a rough census carried out at each of the main fishing centres and do not take into account the large number of 'house boats' in which the aged and very young (i.e. non-operative) fisherfolk live.

284. Marine Department licensing figures show that considerably more boats are licensed to fish out of Hong Kong than the number

recorded at Appendix 1 Table Y. Not all of these vessels however are permanently based in Hong Kong, many landing fish here only periodically. It is thought that the annual Chinese New Year census figures provide a reasonably accurate assessment of the 'regulars' working out of Hong Kong.

Analysis of Catch

285. An analysis of landings of the most important species of fish, and figures for the same species during the previous year, are set out at Appendix 1 Table W.

Mechanization

286. An additional 848 vessels joined the mechanized fleet, and after allowing for the disappearance of eighty five former mechanized vessels (most of which either reverted to sail or transferred to the motor trading register) the total strength of the mechanized fishing fleet as at the 31st March, 1958, stood at 2,287 vessels. Details are recorded at Appendix 1, Table Z.

287. The net increase of 763 additional mechanized boats (i.e. 848 minus 85) made this a record year in the history of Hong Kong fishing boat mechanization. Altogether 710 of the 848 newly mechanized boats joined the fleet during the first nine months of the period under review, an average of 237 per quarter. During the three months January, February and March, the total figure was only 138. This sudden slowing down of the rate of mechanization is directly attributable to the uncertainty brought about by the Chinese Government's threat to prohibit fishing in territorial waters by boats not registered in China.

288. Particulars relating to the engines installed are contained at Appendix 1 Table XA.

Fishing Boat Development

289. A total of 577 new power driven fishing boats were referred by the Fisheries Division to the Marine Department for licensing during the year. (This figure does not include the number of newly built sailing craft that were also licensed, no record of which is kept by the division). Of the 577 newly mechanized boats, all but ninety three vessels were built in the Colony (i.e. fifty two being built in Macau and forty one in Chinese ports). A consolidated summary containing brief particulars

regarding these vessels, together with totals for the previous year, is recorded below:

TABLE 24
NEWLY BUILT FISHING BOAT HULLS MECHANIZED IN 1957/58

<i>Type of Vessel</i>	<i>Number of Vessels</i>	<i>Capacity (in piculs)</i>	<i>Main Engine Horse Power</i>	<i>Cost of Wooden Hulls</i>
Deep Sea Trawler	13	26,714	1,676	HK\$ 694,400
Inshore Trawler	77	63,802	4,868	814,300
Shrimp Trawler	78	48,526	4,545	597,870
Big Long Liner	5	8,516	532	186,100
Medium Long Liner	25	16,315	1,261	240,870
Small Long Liner	184	38,368	2,978	629,914
Hand Liner	10	2,461	178	38,690
Big Purse Seiner	4	5,203	276	86,400
Purse Seiner	146	49,375	4,075	764,700
Gill Netter	32	8,404	616	118,240
Fish Collector	3	1,606	138	25,700
Total	577	269,290	21,143	\$4,197,184
1956/57	318	123,748	10,226	2,062,384
Comparison	+259 (+81%)	+145,542 (+118%)	+10,917 (+107%)	+\$2,134,800 (+104%)

Note: In all 848 vessels were actually mechanized during the year; the other 271 registrations consisting of former sailing craft into which engines were installed.

290. More detailed comparative data concerning costs, capacities and engine horse-power installed, etc., in respect of the 577 newly mechanized vessels is contained at Appendix 1 Table XB.

Steam Chest

291. In local junk building practice the timber is bent into shape by the primitive method of subjecting it to a direct fire, while the ends are pressed down with heavy stones. This results in considerable wastage of both material and labour. The Craft Technician accordingly designed a simple steam chest which was built and lent to one of the most progressive native yards. This particular junk builder was at first rather sceptical of the 'new method' (which is commonly used in all modern yards), but following demonstrations he became fully aware of the advantages and used the chest as much as possible; so much so that difficulty was experienced in getting the steam chest back in order to be able to lend it to another yard.

Continued Progress

292. The improvements in local fishing junk design and construction mentioned in the Annual Report for 1956/57 continued to be adopted during the year under review. For example, ninety two of the new junk trawlers were built with better shaped sterns which meant that they could dispense with the customary 'A' brackets normally used to support the long projection of propeller shaft (and which result in a loss of efficiency). A further fourteen new vessels were fitted with steel rudder stocks and blades (instead of the cumbersome old type wooden arrangements); while seven of these also had wheel-houses and got away from the usual wooden tillers by having a steering wheel in the wheel-house and either chain or cable steering linked-up to a quadrant.

293. A pair of seventy six foot improved Kwong Hoi type 'deep sea' junk trawlers were each built around four previously prepared sectional templates in one of the leading yards. As usual, there were no plans for these boats; nor could the builder have read the plans had there been any. The shape of the templates had been decided by the builder and the fisherman skipper/owner in the light of their experience. These two boats each had wheel-houses and semi-balanced steel rudders.

294. Only in very exceptional cases in the past have newly built local fishing craft ever been subjected to proper speed and engine trials; the usual thing being to make a picnic and holiday out of what ought to be a serious occasion. During the year under review, however, the owners of two junk trawlers and one large long liner invited the Craft Technician to be present and to assist in the conduct of proper trials by explaining the procedure and bringing along the departmental fuel measuring tank and tachometer. This is indicative of the more enlightened attitude and general interest now being shown by leading fishermen.

Fisheries Division Vessels

295. Although the Government F.D.V. No. 2 ('Yuen Ling') had been built with a much better shaped under-water body than the local junks, it had been deliberately decided that the hull planking—and in particular the garboard strakes—should fit straight into the keel in accordance with local practice. This made for sharp corners which created partial vacuums and thereby upset the flow of water along the boat's side. To demonstrate the effect of a better shaped hull, the Surveyors of the Marine Department kindly provided details of a pair of tapered wooden fillets, which they suggested should be fitted on either side of the keel, to properly 'fair' the lines of the boat. These fillets were duly made and

fitted. In addition, the square edges of the stern chock were also rounded-off (this being an elementary but important matter which, as yet, is not normally being done in local junk building yards). Carefully conducted speed trials, both before and after the alterations, were carried out. The savings in fuel consumption varied between 12·3% at the maximum of 925 r.p.m. and 24·1% at the slower (trawling) speeding of 390 r.p.m.

296. The original mast supplied when F.D.V. No. 1 ('Olenka') was built in 1953 had deliberately been made to carry navigation lights only; it then being necessary to demonstrate the reliability of the diesel engine. As the local fisherfolk no longer have any doubts on this point, and as their tendency is to be too dependant on their engines and to allow their sails to deteriorate, 'Olenka' was provided with a new mast capable of carrying a sail. In accordance with a recent change now prevailing in most of the small local boats, this new mast is stepped in a tabernacle (instead of passing through the deck) for easy lowering—which is highly desirable when the vessel is proceeding under engine power in a beam sea.

297. On attempting to use the new sail on 'Olenka', it was found that the boat would not respond sufficiently with just the small balanced steel rudder fitted for mechanical propulsion only. This was rectified by adding a false keel and the introduction of plenty of deadwood (thereby also making it possible to do away with the former 'A' bracket), which changes provided sufficient steerage way with the same small rudder.

298. A number of minor alterations and improvements were carried out on both F.D.V. Nos. 1 and 2. For the first time, an annual engine overhaul was carried out completely by the Fishermen Engineers of the division—this work having always been done before by the local agents for 'Kelvin' diesels.

Proposed F.D.V. No. 3

299. With a view to assisting the development of modern distant-water fishing, financial authority was received for the construction of a suitable wooden vessel to be built in a local yard. The Craft Technician accordingly prepared a preliminary lines plan (based on the usual M.F.V. form but much improved) together with a general arrangement drawing. The proposed principal dimensions are 83' - 0" length overall; 74' - 6" length between perpendiculars; 18' - 9" breadth over planking; 10' - 9"

moulded depth; and 8' - 6" loaded draft moulded. The engine selected was the new 'Kelvin', Model T - 8, diesel developing 240 h.p. at 1,000 r.p.m. with a reduction gear fitted giving a propeller speed of 300 r.p.m.

Fishing Investigations

300. The Assistant Fisheries Officer (Marine) was sent to Japan for a 3½ months' course of instruction, mainly concerned with fishing methods and gear. This was especially arranged through the courtesy of the Japanese Government.

301. Using the differential gear in a second-hand motor car back axle, the Mechanical Engineer in the Public Works Department built and installed a winch on F.D.V. No. 2. This winch is similar to the type that is commonly seen on inshore fishing boats in the United Kingdom. In the first instance, two warping barrels were fitted and all the otter trawling was done with manila rope warps. Subsequently the warping barrels were replaced by drums and wire warps were successfully used.

302. A native type pair trawl, modified by the addition of a 'square' was made and operated with otter boards from F.D.V. No. 2. At the same time, F.D.V. No. 1 was employed in towing a small sized nylon shrimp otter trawl. No direct comparison may be drawn between the efficiency of these two nets owing to their differences in size, and also to the fact that the engine in one boat is more powerful than that in the other. The modified native net did, however, produce much better results.

303. One of the old nylon otter trawls was found to be too light to stay down properly on the bottom and, furthermore, there was considerable slippage in the knots and mesh deformation. These difficulties were overcome by treating the net with a tar solution.

304. A small Japanese pair trawl, based on a design brought back by the Assistant Fisheries Officer from Japan, was made at the end of the year by the Fisheries Division crew.

305. A sample quantity of 'Saran - N' (a synthetic fibre composed of a mixture of nylon and 'Saran') was received from the local sales agent of the Japanese manufacturers. This was duly made-up into a long line to be fished alongside lines of other material.

Voyages in Commercial Trawlers

306. Fisheries Supervisors made trips in the British registered steel trawlers belonging to two of the local companies which employ Japanese

'Fishing Instructors'. This was done to ascertain to what extent the local Chinese crews had benefitted from the training received and to study the Japanese method of pair trawling. (A similar trip had been attempted during the previous year but on that occasion the boats had been forced to return to Hong Kong after encountering a typhoon, and no fishing operations were conducted).

Fishing with Dynamite

307. A considerable amount of fishing with dynamite is carried out by both the local fisherfolk and their neighbours in surrounding Chinese territorial waters, and particularly by the pa t'eng and purse seine net boats during the Mackerel Scad season. A propaganda campaign directed against the use of dynamite was accordingly conducted through the coxswain and engineer classes. The effect of this completely illegal practice on fish stocks was explained and it was also pointed out that only a small proportion of the fish killed are actually recovered, with the result that scavengers such as shark and puffer are attracted to, and induced to stay on, the fishing grounds. It was not really necessary to elaborate on the personal dangers involved in using dynamite, because in nearly all the main fishing centres there is at least one fisherman dynamiter who has lost an arm or hand, but naturally this point was also made.

Training of Fishermen

308. The division continued with its training programme designed to qualify fishermen as Skippers (for British registered ships), Coxswains and Engineers. In each case the training is in line with the requirements of the Marine Department.

Skipper Classes

309. All six candidates of the 6th Skipper Class, who had completed their course of instruction towards the end of the previous year, were examined by the Marine Department and successfully obtained 'Acting Trawler Master (Limited)' endorsements to their Coxswains' Certificates.

310. Only one of the three candidates in the 7th Skipper Class, which commenced on the 1st June and closed on the 18th October, passed the examination on the first attempt. The other two candidates joined the 8th Class and were due to be re-examined with their new class early in April.

Coxswains' Classes

311. Ten classes, involving 243 fishermen, were organized during the year. These were held at Aberdeen, Cheung Chau, Shau Kei Wan, Sai Kung and Tai Po. Including candidates who had been trained during the previous year but were not examined until after the 31st March, 1957, the number that passed the Marine Department examinations was 174, of which twelve obtained the 'Full' certificate for mechanized vessels of up to sixty tons net, while the remaining 162 candidates obtained 'Modified' certificates for fishing craft of under 1,000 piculs capacity.

312. In all, a total of 824 fishermen have received Coxswains' Certificates, following departmental training, since the classes first started in April, 1951.

Engineering Classes

313. Three classes, with a total of forty six fishermen candidates, completed their training during the year. Including candidates of the 10th and 11th classes who had been trained but not examined in the previous year, a total of thirty four candidates from the 10th, 11th and 12th Classes took the Marine Department examination. Only one candidate failed and he is to be re-examined.

314. Candidates from the 13th and 14th Classes were due to be examined in May and July, 1958. These fishermen were asked to return to their vessels and continue fishing, on the understanding that they would be given a refresher course later.

Chinese New Year Celebrations

315. The third annual 'Sports Meeting', organized by the old boys of the coxswain and engineering classes with the help of the division, took place at Aberdeen on the first day of the Chinese New Year (18th February, 1958). Teams of fishermen from nine districts competed in a number of sporting events. The prizes were presented by the wife of the Director. 1,000 fisherfolk were entertained with soft drinks and food packages, and in all an estimated 3,000 people watched the sports.

Visiting Fisheries Training Ship

316. The new 1,452.9 gross ton training and research ship 'Umitaka Maru', of the Tokyo University of Fisheries, visited Hong Kong in April on its way back to Japan from the Antarctic. A party of thirty six of the ship's officers and student cadets were shown some of the main

features of the local fishing industry and then entertained at the Aberdeen Fisheries Office. Hong Kong fishery workers were invited in return to visit the 'Umitaka Maru' and were given an opportunity to examine the up-to-date equipment on board. Of particular interest was the new type trawl gear, operated over the stern of the ship.

II. FRESH WATER FISHERIES AND OYSTER CULTURE SECTION

Fish Ponds

317. This was an excellent year for the fish farmers of the New Territories. There was adequate water for the ponds throughout the year. Fish prices were good and there were none of the usual difficulties in obtaining supplies of fish fry. Production was high. Among all the different forms of farming carried out in the New Territories, it seemed as if only the fish culturalists made handsome profits. The rainfall data recorded at Table 1 of this report showed an increase of 50·74 inches over that of the previous year. There was some damage from floods during May and July but most of this was quickly made good.

Supply of Fish Fry

(i) *Chinese Carp Fry*

318. As a result of the successful hatching season in the East and West Rivers early in the year, supplies of Chinese Carp fry became, at long last, readily available again. Prices came down considerably and except in the case of the Big Head fry (prices for which remained a little high) these were roughly the same as they had been three years previously. The limitations formerly imposed by the Chinese authorities on the numbers of fry that could be exported, and the restrictions on the proportions of the different varieties of fry (whereby it had in the past been necessary to take numerous fish of unwanted species to acquire the important species required) were completely removed.

(ii) *Grey Mullet Fry*

319. The 1957 season (January to March) for the capture of Grey Mullet fry had been an excellent one—over five million fry having been caught. It was mainly this that had laid the foundation for the good year now under review. The 1958 season was, unfortunately, most disappointing. Only some 400,000 fry (weighing 400 catties or 6,400 taels) were caught in the coastal waters—whereas at least four million of these fry would have been required to fully stock all the ponds of

the New Territories. The prices paid for Grey Mullet fry varied from \$1.00 to \$6.00 per tael (i.e., sixty fry each of one inch in length), the highest prices yet on record.

320. One of the mechanized Fisheries Division vessels was used to tow professional Grey Mullet fry catching fishermen, in their sampans, to a number of different areas in the hope that it would be possible to find shoals of the fry. In addition, the Police Department permitted a number of these fishermen to enter the 'Closed Area' at Sha Tau Kok (near the border) in the hope that they would be able to find the fry there. Neither of these attempts proved successful.

Increase of Fish Ponds

321. Only two new ponds, covering a total area of thirteen dou chung (or $2\frac{1}{2}$ acres), were put into operation during the year. These were both fresh-water ponds. The area devoted to fish culture as at the end of the year was 3,103.5 dou chung (or 517.25 acres).

322. Considerable sums of money are required to build new fish ponds and it was mainly for this reason that only two additional ponds were opened up. Although, as a result of the good year under review, many fish farmers deepened their ponds and made other improvements, any further large scale developments such as the building of new ponds would not ordinarily take place until the following year. The predictions for 1958/59 are not, however, particularly bright as the Grey Mullet fry season has once again been a failure.

K.A.A.A. Loans to Fish Farmers

323. Valuable help for the industry was received from the Kadoorie Agricultural Aid Loan Fund. Ten loans amounting to \$12,000 having been made during the year for the purchase of fish fry, fertilizer, feed and repairs to fish ponds.

Fisheries Division Ponds

324. Eighty thousand Grey Mullet fry had been put into Pond No. 1 during March, 1957, with the intention of keeping them crowded until the Autumn, when they could then be disposed of among local fish farmers to restock their ponds for a second crop, at a time when Grey Mullet are not ordinarily available.

325. The second, or larger pond, is reserved for comparative studies to be made of the conditions required to achieve increased productivity. This work is to be carried out as a joint project by the Fisheries Research Unit of the University of Hong Kong and this department.

326. Although the bunds of these two ponds were six inches higher than the height originally agreed upon by all the experts to be perfectly safe, nevertheless both ponds were flooded during the heavy rains in May and July.

327. Of the original 80,000 Grey Mullet fry, only 2,700 were recovered as six to seven inch fingerlings. Most of these (2,040 fish) were given to the co-operatively managed village fish pond at Luk Keng.

328. Local fish farmers have great difficulty in transporting Grey Mullet fry and fingerlings, the losses being particularly high. They have a saying that once this species of fish has been 'exposed to the air' they can never be kept alive again in water. Experiments designed to ascertain the minimum requirements under which Grey Mullet fingerlings could be satisfactorily transported (a) in sealed polyethylene bags with water and oxygen, and (b) in open wooden tubs, were carried out and demonstrated to fish farmers.

329. Materials required for the sub-division of Pond No. 2 were obtained and, in consultation with the Fisheries Research Unit of the University, plans were drawn up for the completion of this work.

Edible Oyster Industry

330. The edible oyster industry is centralized in Deep Bay on the western coast of the New Territories. Production figures are recorded at paragraph 52 of this report. To facilitate exports, officers of the division witnessed harvesting operations at the oyster beds and the subsequent processing. Altogether 5,668 containers were sealed and the contents certified as being of genuine Hong Kong origin.

Oyster Culture Experiments

331. With a view to trying to reduce the cost of producing edible oysters by the already proven 'hanging-drop' methods, a number of different materials were tried instead of the galvanized iron wire used previously. These included second hand iron chain; bamboo sticks, rattan; nylon; and rope made of ramie, palm and bamboo fibre, jute and sisal.

332. One of the main reasons why the 'hanging-drop' method has not caught-on as might have been expected is that the local fisherfolk strongly object to the mooring of rafts in Deep Bay. Although the oystermen have held leases for their beds for at least a hundred years, they have never previously done anything but cultivate oysters on the sea floor. There was some interference even with the Government rafts.

but oystermen claim that any rafts that they themselves might put down would be quickly broken by fishing junks making fast to them and by fishermen at night stealing materials.

Cultured Pearls

333. Following a successful commercial pilot scale experiment at Kat O, during the course of which 4,100 'blister' pearls were cultivated, a number of businessmen have shown great interest. Rather than allow indiscriminate exploitation of the limited stocks of wild pearl oysters (*Pteria penguin*), it was decided that the new industry should be regularized and controlled by legislation. Joint investigations were accordingly carried out by the Fisheries Research Unit and Fisheries Division to decide upon a minimum size of wild oyster that may be collected or embedded.

Certificates of Origin

334. In addition to oyster produce, the division was responsible for the certification of origin of a number of other marine products for export. Quantity and value of this produce is referred to in Section 1 of this report.

Agricultural Show

335. Living specimens of all the pond fish reared locally were on display in aquaria at the Agricultural Show held in Yuen Long between the 4th and 6th January. Fish farmers once again readily entered into a competition in which their best fish were judged and prizes awarded.

PART 6

FORESTRY DIVISION

Officer-in-charge: Mr. A. F. Robertson, B.Sc. (Edin.)—Forestry Officer.

INTRODUCTION

336. Over three quarters of the land area of Hong Kong is steep and mountainous; the natural vegetation is predominantly grass with scattered areas of scrub and scrub forest in the remote and inaccessible areas. Most of the hill land is suitable for forestry and large scale afforestation is urgently required to check soil erosion, which is prevalent in many areas, and to conserve water supplies and prevent serious flooding. Briefly the policy of the department is to afforest the waste hill lands for these reasons and to produce timber and fuel for local use, both by the formation of Government forest reserves and plantations and by the encouragement of village forestry.

337. The newly formed Fu Shui Forest Reserve and an additional area at Shap Long Forest Reserve increased the total area of reserves to 15,968 acres, including 5,796 acres of established plantations and areas under regeneration operations at the end of the year. Most of the forest reserves are in the Colony's water catchment areas. During the year a new draft Forestry Ordinance, with provision for the legal constitution and control of forest reserves, was in preparation.

AFFORESTATION

Seed Supplies

338. Seed of pine (*Pinus Massoniana*) was collected locally and a total of 643 lbs. obtained. Arrangements to obtain additional supplies from China through a local seed merchant unfortunately fell through. The position was therefore considerably worse than in the previous year when a total of over 3,000 lbs. was obtained from both sources, but as part of this quantity remained in stock the situation was not serious. All the freshly collected seed was put into cold storage in sealed containers at about 34°F., under which conditions there is only a very slow decrease in germinative capacity. Seed of other species for afforestation and amenity planting was also collected locally and only



Figure 5: Tree Planting Day 1958.

Figure 6: Off to plant a Tree. New Territories Tree Planting Day 1958.





Figure 7: Shows the importance of Nitrogen as a fertilizer for rice.
N=Nitrogen; K=Potassium; P=Phosphate.
(See paragraphs 143 - 147 of Report).

Figure 8: Millet at Ta Kwu Ling Dry Land Station.



a few small quantities of exotic species were obtained from abroad for trial.

Nursery Work

339. During the summer, nursery work was reviewed and plans prepared to raise the necessary stock for planting in 1958. It was decided that it was unsatisfactory to attempt to supply very remote areas such as Sai Kung and Lantau with plants from the main nursery at Tai Lung, Sheung Shui. Extension of local nurseries was therefore planned in such areas, and at Tai Lung stock was raised only for the neighbouring areas of North, West and South districts. New district nurseries were developed at Chuen Lung, Tai Tam, Tin Fu Tsai, and in the Fu Shui Forest Reserve, and the existing nurseries at Sai Kung, Sha Tin and Shap Long were extended. At Tai Lung nursery, which was started in 1955, some reorganization took place and much was done to improve nursery practice there. The difficulties of running such a large nursery were gradually overcome during the year and the beginnings of a sound nursery routine were laid down. Improved plastic tubes of polyethylene film were obtained and a larger proportion of the nursery stock was tubed in plastic or roofing felt tubes.

Plantations

340. The 1957 planting season commenced in March and most of the work was completed by June, although some late planting was continued up to September. The 1958 season was exceptionally early: there was suitable weather from January onwards and it was possible to complete a considerable acreage by the end of March, but as this work represents only the start of the 1958 programme details of it are not included in this report in which only the completed operations of 1957 are described. It is, however, of interest to note that in addition to 1,272 acres of plantations formed during the 1957 season a further 457 acres were planted in the period January to March 1958 making a total of 1,729 acres planted during the twelve months covered by this report.

341. A number of changes led to an expanded afforestation programme. First there was the opening of the Chi Ma Wan Prison adjacent to the Shap Long Forest Reserve where afforestation was commenced in 1956. Arrangements were made to employ prisoners on afforestation and planting had to be stepped up to provide work for the large labour force available. The catchment areas of two new irrigation dams at Lo Fu Hang and Hung Shui Hang were formed into the Fu Shui

Forest Reserve and plans prepared to afforest the whole area, parts of which are severely eroded, over a period of three years. Afforestation of eroded areas in the Tai Tam reservoir catchment area on Hong Kong Island was also started.

342. The following is a brief account of work carried out in the main afforestation areas:

(i) *Tai Lam Forest Reserve* (twenty compartments = 3,269 acres)

343. A total of approximately 390 acres of new planting was done: pine plantations were extended in compartments 5, 7, 8, 14 and 16. considerable areas of *Casuarina* spp. and *Tristania conferta* were planted in compartments 6, 8, 14, 16 and 18 and smaller areas of a variety of broadleaved species were planted in compartment 18 and other areas. Extensive areas were replanted and tended and in compartments 6 and 15 thinning was done in pine plantations about five years old where growth has been very fast. Excellent progress has been made in this reserve since work was started in 1952 and the plantations are showing up well in most of the compartments adjacent to the reservoir. The extensive barren and severely eroded patches so evident in 1952 are now assuming a green appearance and many of them are already completely covered by thick pine plantations.

(ii) *Fu Shui Forest Reserve* (five compartments = 1,212 acres)

344. This small reserve comprises two adjacent stream valleys and consists of some of the most rugged and desolately barren land in the Colony. It is not surprising, in view of the lack of vegetation, that the neighbouring agricultural areas suffer shortages of water in the dry season and floods during the heavy summer rains. Irrigation dams were completed early in the year to improve water supplies but it is obvious that the problem will not be finally solved until forest cover has been established on the barren slopes. Afforestation work started in June when about twenty five acres of grassy slopes in compartment 4 were broadcast with pine. In August and September planting was done in compartments 1, 2 and 3 including forty five acres of pine and twenty acres of other species including *Tristania*, *Acacia* and *Eucalyptus* spp.

(iii) *Shing Mun Forest Reserve* (twenty three compartments = 6,025 acres)

345. New planting of pine was restricted to compartments 12 and 19 in which a total of 203 acres was planted. Small areas were planted in other compartments mainly using *Casuarina equisetifolia* and *Tristania*

conferta bringing the total of new planting for the reserve to approximately 230 acres. Pine plantations in compartments 13 and 14 were replanted and tending, weeding and adding fertilizer were done in other areas. The thinning in compartment 11 in 10 year old pine plantations was completed.

(iv) *Kowloon Hills Forest Reserve* (twelve compartments = 1,818 acres)

346. Little progress was made in this reserve but some small scale planting and tending work was done.

(v) *Pat Heung Forest Reserve* (eleven compartments = 2,133 acres)

347. 158 acres of pine plantation were formed in compartments 3, 5 and 7, and twenty four acres of *Tristania conferta* and forty six acres of *Acacia confusa* were planted in compartments 7 and 5 respectively. Small plots of a large number of species were also planted mostly in compartments 9 and 10 bringing the total new planting up to 279 acres. Extensive replanting of previous years' plantations was also done and fertilizer was added in a number of plantations. Results in this reserve have been good and in the areas planted in 1955 the trees are beginning to show above the grass and are entering the period of rapid growth.

(vi) *Tai Po Kau Forest Reserve* (ten compartments = 693 acres)

348. 107 acres of new pine plantations were added in compartments 1, 2 and 3 and much replanting was also done.

(vii) *Shap Long Forest Reserve* (three compartments = 818 acres)

349. 156 acres of *Casuarina* spp. and pine were planted and the 1956 plantations were tended and a small amount of replanting done. Planting of the direct catchment area of the reservoir which was started in 1956 was completed. During the year the Chi Ma Wan Prison was started in this area and since then afforestation work has been carried out entirely by prison labour under the supervision of the forestry staff.

(viii) *Tai Tam Catchment Area*

350. Extensive pit sowing of pine was done in eroded areas in the upper part of the catchment area. An excellent nursery site was found in the vicinity and developed to raise stock to complete the job in 1958.

FORESTRY LOTS

351. Under the scheme of assistance to village forestry a total of approximately 380 acres of plantations were formed on village forestry

lots. In addition, replanting and tending of older plantations was done. The object of the scheme is to teach the villagers how to plant and manage their forestry lots in order to provide a regular return of fuel and small timber for local consumption or for sale. Of the total, 236 acres were planted in Sai Kung district where the scheme was first introduced about ten years ago. The more accessible parts of this district are now fairly thickly covered with pine and wild tree growth and attention has been turned to the outlying areas where the vegetation is scanty and the need for afforestation much greater. Nursery and planting work continued at Pak Tam Chung and new small nurseries were started at Lan Nai Wan and Sai Wan thus carrying the work to the farthest extremity of the Sai Kung peninsula. The main nursery at Sai Kung was extended and improved and much was done to improve the standard of nursery and plantation work. Forestry lot planting is spread over a large area with small areas in many lots and it is difficult to maintain as high a standard as in forestry reserve planting. Very strict control is therefore necessary to obtain good results, which are of course essential if the villagers are to be impressed with the value of the scheme.

352. In the Castle Peak area work has only been in progress for a few years and most of the plantations formed so far are still in the early stages. There is, however, keen interest in the district, mainly because of the exceptionally rapid growth in the Model Plantation started in 1953 which is now a striking landmark in this otherwise very barren district. 128 acres of new plantations were formed on forestry lots in the area during the year.

353. Visits were made to the Tsing Yi and Sha Tin areas to explain the scheme to the villagers with a view to planting in 1958. Some work was also done on the smaller islands in the vicinity of Lantau. At Chek Lap Kok Island, for example, some planting was done in connexion with a rural resettlement scheme there.

AMENITY PLANTING

354. Over 12,000 trees were planted for amenity purposes along New Territories roadsides and in Army camps, resettlement areas, bathing beaches and cemeteries. A small park was formed near Tai Po Kau.

355. In September Typhoon 'Gloria' caused very extensive damage to the older amenity trees many of which are in poor condition and easily damaged by strong winds. Hundreds of roadside trees were

completely up-rooted and very large numbers of trees had their branches broken. The work of clearing fallen trees and pruning broken branches continued for several months.

PROTECTION

Forest Offences

356. A total of twenty six persons involved in seventeen court cases were convicted of forestry offences. All the cases were trivial and there was no significant damage to forests by illegal cutting. The decline in forestry offences noted in the 1956/57 report has therefore continued and offences have dropped to such a low level that illegal cutting, once an almost insoluble problem absorbing the greater part of the time and resources of the Forestry Division, can now no longer be considered a major source of injury. Outside forest reserves cutting is more or less unrestricted but it has remained on a small scale and is not destructive to the wild vegetation.

Fire

357. Because of frequent rainy periods in October, the fire season started rather later than usual, but starting from the end of October there followed a prolonged dry period which lasted up to the 8th January. From then on there were occasional short rainy periods; the grass became green earlier than usual and there was consequently less fire risk in February and March than in drier years. A total of 300 fires was reported, most of them occurring in the long dry period mentioned above. Only thirty six fires occurred in forest reserves damaging a total of fifty five acres of plantations. In most cases the fires were checked and extinguished by prompt action of the forestry staff. Only one fire got out of control and burnt fifty acres of plantation. It broke out at about 7.45 p.m. on the evening of the 3rd of January in compartment 20 Shing Mun Forest Reserve. This compartment is unplanted but the fire unfortunately crossed the fire barrier into compartment 21 where there was a promising stand of young pine three to four years old and also a less successful plantation of *Eucalyptus robusta*. The fire barrier had been recently cleared and widened to 20' and would have stopped the fire if there had not been such a strong wind. As it was, the fire crossed the barrier at only one point. Forestry staff reached the fire soon after it had spread into compartment 21, but in the adverse conditions it was impossible to check the fire in the pine area, most of which was burnt out. The fire was then easily checked in the *Eucalyptus* plantation where the growth was not nearly so thick. About forty acres of pine

and ten acres of *Eucalyptus* were burned. The latter species is not generally killed by fire and will recover. In addition to the above, three fires caused damage in village forestry lots in the Sai Kung area.

358. Six miles of new fire barrier were made at Shap Long, Pat Heung, Tai Po Kau and Shing Mun and all existing fire barriers were re-cleared. Additional field telephones and cables were obtained to improve communications for reporting fires. The existing system of fire hazard estimating which depended on weather information provided by the Royal Observatory was discontinued and a new system introduced in which estimates are made in each area independently by direct observation of the weather conditions. Wet and dry bulb thermometers were supplied to each district for calculating the relative humidity and a wind scale provided to assist in estimating wind velocity. Some changes were also made in the fire index table, more weight being given to the wind factor, as fires are so much more likely to spread and are more difficult to control when the wind is strong.

Forest Pests

359. There was a local outbreak of pine caterpillars in the Ngau Chi Wan area of Kowloon. This pest has not appeared in forest reserves for a number of years.

Other Injuries

360. Both Typhoon 'Wendy' and Typhoon 'Gloria' caused some windblow in plantations. The only serious case was in the older pine plantations in compartment 11, Shing Mun, where trees are of bad form because early thinning was not done. The thinning carried out in the last two years has left the remaining trees particularly susceptible to windblow.

COMMUNICATIONS AND BUILDINGS

361. The Pat Heung access road was extended half a mile through very difficult steep country and plans were drawn up to extend it to Tin Fu Tsai nursery in Tai Lam Forest Reserve. A short access road was made to the new Tai Tam nursery. Extensive repairs were carried out to the roads leading to the Sai Kung office and the Fu Shui Forest Reserve. The forestry staff at Shap Long assisted in the construction of a road by the Prisons Department leading from Chi Ma Wan Prison to join up with the South Lantau Road. Approximately nine miles of forest paths were added in forest reserves and all existing paths were maintained.

362. A considerable programme of building work was carried out departmentally. A barrack quarters, store and office were completed at Shap Long Forest Reserve to replace most inadequate rented accommodation. A derelict military shelter was completely renovated and converted into a new post at Wong Nei Chung Gap. A second floor was added to the Ranger's quarters at the 6½ mile Tai Po Road leaving the ground floor as a sub-office for the Kowloon Hills area. The barrack buildings at Shing Mun and Tai Po Kau were extensively repaired and improved. At Tai Lung a slatted nursery shade was made and minor nursery buildings were constructed in a number of the district nurseries. Other buildings were repaired and repainted. In addition to the above, a new district office building was constructed at Shing Mun on contract.

TIMBER TRADE

363. There is at present no local production of timber and fuel and the whole of the Colony's needs is imported. Considerable amounts of timber and fuel are re-exported. A summary of imports and exports is given in Appendix 6.

364. The export trade of graded sawn timber to the U.S.A., Australia, the United Kingdom and other high class timber markets continued to expand during the year. The following figures show the approximate amounts of sawn timber in tons exported to those countries since 1953:

1953	...	...	...	...	...	...	...	1,100	tons
1954	...	...	...	...	...	...	...	2,300	..
1955	...	...	...	...	...	...	...	5,600	..
1956	...	...	...	...	...	...	...	9,300	..
1957	...	...	...	...	...	...	...	12,600	..

365. This export trade depends on imports of logs, which are obtained almost exclusively from British North Borneo and Sarawak, the main species being *seraya* and *keruing*. Because of abundant cheap labour and a ready local market for low quality timber Hong Kong is able to import low grade logs from which, by intensive selection, the high quality export timber is cut, the remaining poor quality timber being disposed of locally. A number of timber firms employ timber graders trained in Malaya to grade their export timber. The Forestry Division continued to give help and advice to the local exporters and also inspected timber and issued Certificates of Freedom from Live Borers in the case of timber consigned to foreign markets which require such certificates.

RESEARCH AND EDUCATION

366. Trial plots and small scale experiments in silviculture were carried on during the year. Investigations in seed sowing and transplanting led to greatly improved results at Tai Lung nursery where for example, the difficulties of raising and transplanting *Tristania* seedlings were gradually overcome, enabling large stocks of this species to be raised for the first time. The small seedlings are very delicate and require very careful handling during transplanting. As the pine plantations in some areas have now closed canopy pruning and thinning trials have been started. These are of interest as they have a bearing on the practice of branch lopping which villagers carry out in their plantations. Experiments were carried out in which a varying proportion from 30% up to about 80% of the living branches were pruned from trees of 6' - 10' in height. Results so far indicate that young pines will stand comparatively heavy pruning without much effect on the growth. In village forestry lots the growth does seem to be seriously checked by lopping, but this may be because trees of much less than 6' tall are lopped, because lopping is repeated year after year and because careless lopping leaving long branch snags causes more damage than pruning with saws.

367. Although the results of investigations of this sort are often of much interest, it has been realized that they are of limited value owing to the fact that experiments have been carried out independently in different areas with little attempt to overall control and co-ordination of results. It was therefore decided during the year to put research work on a proper footing by drawing up a research programme and making provision for separate research staff with adequate facilities to carry on the work systematically. Towards the end of the year under review an officer was assigned to research work on a part time basis to prepare a programme and make plans for research in the following year.

368. In September a staff training course of two weeks was held at Tai Lung Headquarters. This was the first attempt at organized staff training and it was attended by twenty four Foresters—the most senior of the subordinate grades. The results were very satisfactory: only five men failed the tests and it was shown that, although the standard of education of the men is low and many are beyond middle age, there are a number of them who can benefit from courses of instruction. The course will therefore be continued in future years and extended to the lower grades of the staff.

369. During the week after Easter, Tree Planting Day ceremonies were held at seven centres throughout the Colony, and were attended by local school children and villagers. At each ceremony a member of the forestry staff gave a short explanation of the value of afforestation and of the great need for public understanding and co-operation to avoid careless damage to plantations. The villagers were also urged to take advantage of the Forestry Division's offer of assistance to plant more trees on their forestry lots. All present at the ceremonies then planted trees to commemorate the occasion, over 3,000 trees being planted altogether.

MISCELLANEOUS

370. A forestry exhibit was prepared for the 1958 Agricultural Show demonstrating various uses for thinnings from young plantations.

371. The division continued to fell and prune trees in private compounds and to issue permits for the clearing of building sites, wood from these sources being sold by tender.

372. The sale of decayed and over-mature village camphor trees in the New Territories was continued and a total of \$40,760 was obtained for village improvement works in sixteen villages.

373. A total of 1,451 Christmas trees was sold to the public or supplied free of charge to charitable institutions.

ACKNOWLEDGMENTS

374. It is with much pleasure that the following acknowledgments are made:—to those members of the public and of the Services who served on the Agricultural Show Committee or otherwise assisted; to those members of the public who co-operated with the Forestry Division in making the Annual Tree Planting week a successful event; to the many firms who supplied the department with valuable information on their agricultural and livestock products; to Mr. Lawrence Kadoorie and Mr. Horace Kadoorie for their continued and ever increasing practical interest in the welfare of the people of the New Territories; to the United States, Netherlands and Japanese Consulates General and the Thai Consulate for making available technical information and statistics from their respective countries; to the Thai Government for making available at regular intervals important vaccines for the control of

animal diseases; to my competent and loyal staff who have with enthusiasm worked hard and well in the interests of the primary producer.

W. J. BLACKIE, M.Sc. (N.Z.),
F.R.I.C., F.N.Z.I.C.,
*Director of Agriculture, Fisheries
& Forestry.*

17th December, 1958.



Figure 9: The shape of the tapered fillets to be fitted on either side of the keel of F.D.V. No. 2 ('Yuen Ling') is explained, by the use of templates, to the master carpenter about to carry out the work. (Paragraph 295 refers).

Figure 10: The teams of fishermen competitors at the Third Annual 'Sports Meeting' held at the Aberdeen Fisheries Office during Chinese New Year, 1958. (Paragraph 315 refers).



APPENDIX 1

STATISTICAL INFORMATION
AND TABULATED DATA

APPENDIX 1

TABLE A
PADDY PRODUCTION 1957

A. *First Crop* (April—July 1957)

(1) Fresh water paddy:

(i) Acreage of 2-crop paddy land	... ..	19,050	acres
(ii) Estimated total yield @ 2 piculs per dou chung	... ..	228,600	piculs

(2) Upland paddy:

(i) Acreage of 1-crop paddy land	... ..	245	acres
(ii) Estimated total yield @ 1 picul per dou chung	... ..	1,470	piculs

B. *Second Crop* (July—November 1957)

(1) Fresh water paddy:

(i) Acreage of 2-crop paddy land	... ..	19,050	acres
(ii) Estimated total yield @ 2 piculs per dou chung	... ..	228,600	piculs

(2) Brackish water paddy:

(i) Acreage of 1-crop paddy land	... ..	2,915	acres
(ii) Estimated total yield @ 2 piculs per dou chung	... ..	34,980	piculs

Grand total		493,650	piculs
		29,864	metric tons

Milled Rice (68%)		<u>20,307.52</u>	metric tons
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TABLE B
PADDY PRODUCTION IN THE COLONY 1957 BY DISTRICT

District	2-Crop paddy		1-Crop Upland paddy		1-Crop Brackish Water paddy	
	Area (acres)	Est. yield @ 2 pls. per d. c. per crop	Area (acres)	Est. yield @ 1 pl. per d. c.	Area (acres)	Est. yield @ 2 pls. per d. c.
Sha Tin	725	17,400 pls.	5	30 pls.	10	120 pls.
Tai Po & Sai Kung North ...	2,255	54,120 pls.	10	60 pls.	—	—
Sheung Shui & Fan Ling ...	3,835	92,040 pls.	125	750 pls.	75	900 pls.
Sha Tau Kok	1,160	27,840 pls.	75	450 pls.	130	1,560 pls.
Kam Tin & San Tin	3,660	87,840 pls.	15	90 pls.	1,310	15,720 pls.
Castle Peak & Yuen Long ...	4,760	114,240 pls.	—	—	1,365	16,380 pls.
Tsuen Wan	130	3,120 pls.	5	30 pls.	—	—
Sai Kung South & Hang Hau	1,100	26,400 pls.	5	30 pls.	20	240 pls.
Lantau Island	1,165	27,960 pls.	—	—	5	60 pls.
Other Islands	260	6,240 pls.	5	30 pls.	—	—
Total	19,050 acres	457,200 pls.	245 acres	1,470 pls.	2,915 acres	34,980 pls.

Grand total: (1) 22,210 acres. (2) 493,650 piculs.

TABLE C

ESTIMATED VALUE OF PADDY PRODUCTION

1957

1. *First Crop:*

(i) Fresh water paddy ...	...	...	228,600 pls. @ \$30 per pl.	\$ 6,858,000
(ii) Upland paddy ...	...	...	1,470 pls. @ \$30 per pl.	\$ 44,100

2. *Second Crop:*

(i) Fresh water paddy ...	...	...	228,600 pls. @ \$45 per pl.	\$10,287,000
(ii) Brackish water paddy ...	...	...	34,930 pls. @ \$30 per pl.	\$ 1,049,400

Grand total \$18,238,500

TABLE D

VEGETABLE

COMPARATIVE PRODUCTION, IN VALUE, 1956/57 AND 1957/58

(CALCULATED TO THE NEAREST \$100)

No.	Kind		
		1956/57 \$	1957/58 \$
1.	Cabbage, Flowering ...	1,967,100	2,143,000
2.	Cabbage, White ...	3,937,400	3,534,500
3.	Cabbage, Leaf Mustard ...	873,400	948,300
4.	Kale, Chinese ...	1,024,600	1,002,700
5.	Sweet Potato ...	282,600	349,400
6.	Tomato ...	684,200	664,500
7.	Watercress ...	676,700	738,700
8.	Onion, Spring ...	492,500	650,500
9.	Turnip ...	661,300	496,600
10.	Lettuce, Chinese ...	552,200	659,300
11.	Spinach, Chinese ...	133,300	181,200
12.	Spinach ...	548,900	478,900
13.	Spinach, Water ...	350,800	550,600
14.	Chinese Chives ...	381,600	255,400
15.	Bringal ...	164,900	193,800
16.	Cucumber ...	296,900	254,800
17.	Bean, String ...	1,168,300	1,400,700
18.	Yam Bean ...	83,000	95,300
19.	Taro ...	139,600	118,900
20.	Miscellaneous...	7,637,900	7,786,800
Total...		<u>\$22,057,200</u>	<u>\$22,503,900</u>

VEGETABLES GROWN IN NEW TERRITORIES, 1956/57 AND 1957/58

No.	Kinds	1956/57 (Metric tons)	1957/58 (Metric tons)	1956/57 (Piculs)	1957/58 (Piculs)
1.	Cabbage, Flowering ...	5,537.52	6,147.14	91,535.18½	101,612.27½
2.	Cabbage, White ...	17,412.22	16,770.41	287,823.97	277,214.81½
3.	Cabbage, Leaf Mustard ...	3,779.32	4,218.31	62,472.23½	69,728.63½
4.	Kale, Chinese ...	2,989.95	3,228.40	49,423.83½	53,365.48½
5.	Sweet Potato ...	1,335.70	1,347.05	22,079.12	22,266.69½
6.	Tomato ...	2,648.04	2,484.64	43,772.17½	41,071.04
7.	Watercress ...	1,786.89	1,981.65	29,537.23½	32,756.61½
8.	Onion, Spring ...	1,558.24	1,345.29	25,757.73	22,237.67
9.	Turnip ...	4,090.63	3,103.69	67,618.16	51,304.06½
10.	Lettuce, Chinese...	2,655.54	3,453.39	43,896.05½	57,084.62½
11.	Spinach, Chinese...	559.51	598.57	9,248.70½	9,894.44
12.	Spinach ...	1,440.55	1,529.61	23,812.37½	25,284.49½
13.	Spinach, Water ...	2,308.97	2,126.86	38,167.27	35,157.00½
14.	Chinese Chives ...	1,128.87	741.68	18,660.26½	12,260.02½
15.	Bringal ...	773.77	498.39	12,790.38	8,238.40
16.	Cucumber ...	1,705.75	1,100.96	28,195.99	18,198.82½
17.	Bean, String ...	1,964.34	1,752.98	32,470.50½	28,976.68½
18.	Yam Bean ...	284.88	327.95	4,709.04	5,421.01
19.	Taro ...	431.77	387.76	7,137.22½	6,409.71½
20.	Miscellaneous ...	22,616.95	21,063.68	373,858.14	352,182.64½
	Total ...	<u>77,009.41</u>	<u>74,208.42</u>	<u>1,272,965.60</u>	<u>1,230,665.16</u>

TABLE F

VEGETABLES GROWN IN NEW TERRITORIES, 1956/57 AND 1957/58

Districts	1956/57 (Piculs)	1957/58 (Piculs)
1. Kowloon ...	66,646.63	56,361.42½
2. Sha Tin ...	4,854.27½	3,088.39½
3. Tai Po ...	98,861.05	92,925.97½
4. Fan Ling ...	388,444.76½	340,960.93½
5. Sheung Shui ...	210,959.77½	227,876.97½
6. San Tin ...	89,708.01	100,169.97½
7. Yuen Long ...	106,342.35	102,213.57
8. Kam Tin ...	95,342.10	102,254.04½
9. Castle Peak ...	164,581.61½	168,029.56½
10. Tsuen Wan ...	47,225.03	36,784.30½
Total ...	<u>1,272,965.60</u>	<u>1,230,665.16</u>

TABLE G

APPENDIX 1—*Contd.*

ESTIMATED VALUE OF FRESH FRUIT CONSUMED IN HONG KONG

Name of Fruit Tree	No. of Trees	Quantity of Fruit (Catties)	Value of Fruit
			\$
Sweet Orange	3,300	56,000	67,200.00
Tangerine... ..	15,500	310,000	310,000.00
Foreign Lemon	300	7,500	3,000.00
Local Lime	13,000	338,000	118,300.00
Pomelo	1,500	75,000	11,250.00
Mandarine	800	4,000	6,000.00
Calamondin	1,700	8,500	8,500.00
Kumquat	1,200	2,400	2,880.00
Wong Pei... ..	7,300	197,100	137,970.00
Lychee	18,500	832,500	749,250.00
Longan	4,500	225,000	112,500.00
Papaya	17,000	340,000	68,000.00
Guava	18,000	270,000	54,000.00
Banana	4,500	135,000	27,000.00
Chinese Olive	4,000	400,000	160,000.00
Carambola	1,100	22,000	8,800.00
Mango	850	102,000	81,600.00
Yanmin	370	74,000	25,900.00
Plum	350	10,500	1,575.00
Persimmon	360	12,600	3,780.00
Sand Pear	200	7,000	2,800.00
Japanese Apricot	5,500	165,000	99,000.00
Peaches	6,000	60,000	18,000.00
Pineapple... ..	75,000	112,500	45,000.00
Miscellaneous	12,500	22,500	9,000.00
(Including jack fruit, loquat, noble bottle tree, rose apple, custard apple, etc.)			
Total	213,330	3,864,700	\$2,131,305.00

TABLE H
FRUIT EXPORT CROPS 1957/58

Name of Fruit Tree	Quantity Produced (Catties)	Unit Price	Value (\$)
Wong Pei... ..	68,000	70 c.	47,600.00
Chinese Olive	128,000	40 c.	51,200.00
Local Lime	84,000	35 c.	29,400.00
Japanese Apricot	170,400	60 c.	102,240.00
Lychee	450,000	90 c.	405,000.00

Fruit crops produced in Hong Kong \$2,131,305.00
 Export value of processed fruits ... \$ 635,440.00
 Fruits locally consumed \$1,495,865.00

APPENDIX 1—*Contd.*

TABLE I

LIST OF VILLAGE ORCHARDS ESTABLISHED UP TO END OF MARCH, 1958

No.	Village	District	Area (Acre)	No. of Trees	Kind of Trees
1	Chek Nai Ping ...	Sha Tin	2.4	306	Orange 30 Tangerine 126 Japanese Apricot 150
2	Tai Po Tsai... ..	Hang Hau	0.8	190	Orange 40 Pomelo 40 Tangerine 110
3	Wah Shan	Sheung Shui	2.3	445	Tangerine 254 Orange 28 Pomelo 28
4	Sai Shan	Ha Tsuen	1.0	220	Tangerine 176 Orange 22 Pomelo 22
5	Ha Che	Kam Tin	1.5	320	Tangerine 260 Orange 30 Pomelo 30
6	Sheung Shui Wai ...	Sheung Shui	1.7	271	Wong Pei 75 Lemon 75 Japanese Apricot 121
7	Tseng Lan Shue ...	Hang Hau	1.3	232	Tangerine 22 Lemon 120 Japanese Apricot 90
8	Luk Tei Tong	Silvermine Bay	1.27	284	Lemon 100 Japanese Apricot 144 Wong Pei 40
9	Pak Ngau Shek	Lam Tsuen	3.0	480	Japanese Apricot 70 Tangerine 360 Calamondin 20 Pomelo 30
	Pak Ngau Shek	(Extension Area)	30.0	907	Blossom 137 Pomelo 300 Wong Pei 200 Guava 100 Lemon 70 Japanese Apricot 100
10	Hin Tin	Sha Tin	0.9	200	Orange 100 Tangerine 100

APPENDIX 1—*Contd.*TABLE I—*Contd.*

No.	Village	District	Area (Acre)	No. of Trees	Kind of Trees
11	Kang Hau ...	Sha Tin	2.5	562	Tangerine 200 Pomelo 100 Lemon 80 Japanese Apricot 182
12	Tai Om ...	Lam Tsuen	1.0	225	Tangerine 100 Lemon 65 Orange 60
13	Tam Shui Hang ...	Sha Tau Kok	0.8	180	Tangerine 90 Wong Pei 90
14	Chuk Yuen ...	Ta Kwu Ling	2.6	582	Wong Pei 100 Japanese Apricot 120 Tangerine 120 Pomelo 100 Lemon 142
15	Chik Kang ...	Sai Kung North	1.25	300	Tangerine 100 Lemon 100 Japanese Apricot 100
16	Ham Tin ...	Ching Yi Island	1.2	260	Tangerine 130 Wong Pei 130
17	Shui Pin Tsuen ...	Ping Shan	1.22	270	Tangerine 135 Lemon 135
18	Wong Uk Tsuen ...	Yuen Long	1.8	380	Japanese Apricot 150 Pomelo 100 Tangerine 130
19	Kwan Tei ...	Fan Ling	1.72	385	Tangerine 185 Wong Pei 100 Japanese Apricot 100
20	Shap Long ...	Lantau Island	1.5	353	Tangerine 190 Pomelo 86 Guava 77
21	Siu Lik Yuen ...	Sha Tin	1.0	228	Tangerine 128 Wong Pei 100
22	Liu Pok ...	Lo Wu	1.25	300	Tangerine 100 Wong Pei 100 Pomelo 100

APPENDIX 1—*Contd.*TABLE I—*Contd.*

No.	Village	District	Area (Acre)	No. of Trees	Kind of Trees
23	Pak Ngan Heung ...	Silvermine Bay	2.12	473	Tangerine 300 Wong Pei 173
24	Nim Shu Wan ...	Silvermine Bay	2.7	600	Tangerine 400 Wong Pei 200
25	Pok Wai ...	San Tin	2.0	450	Tangerine 300 Japanese Apricot 150
26	Lo Uk Tsuen ...	Ching Yi Island	1.5	357	Tangerine 135 Japanese Apricot 135 Guava 87
27	Ngau Au ...	Tung Chung	0.9	200	Tangerine 100 Japanese Apricot 100
28	Tai Wai ...	Sha Tin	2.3	520	Tangerine 200 Wong Pei 200 Guava 120
	Tai Wai ...	(Extension Area) Sha Tin	2.2	470	Local Lemon 200 Japanese Apricot 270
29	Ma On Kong ...	Kam Tin	4.0	870	Tangerine 300 Lemon 200 Japanese Apricot 370
30	Tai Tong Wu ...	Sha Tau Kok	2.0	450	Tangerine 250 Wong Pei 200
31	Ping Yeung...	Ta Kwu Ling	1.6	350	Japanese Apricot 200 Guava 150
32	Lipscomb ...	Lam Tsuen	0.5	109	Tangerine 40 Lemon 50 Grape fruit 5 Valencia Orange 10 Navel Orange 4
33	Sha Kok Mei ...	Sai Kung	1.2	260	Tangerine 100 Lemon 100 Wong Pei 60
34	Tin Fu Tsai ...	Tsuen Wan	1.7	380	Japanese Apricot 150 Tangerine 150 Guava 80

APPENDIX 1—*Contd.*TABLE I—*Contd.*

No.	Village	District	Area (Acre)	No. of Trees	Kind of Trees
35	Sun Hing Tsuen ...	Ha Tsuen	2.0	440	Guava 80 Tangerine 180 Lemon 180
36	Shan Pui ...	Yuen Long	1.9	420	Guava 120 Tangerine 100 Lemon 100 Pomelo 100
37	Chung Mei ...	Ching Yi Island	0.9	200	Tangerine 60 Lemon 60 Guava 80
38	Ngau Tam Mei ...	San Tin	2.4	540	Japanese Apricot 300 Wong Pei 60 Lemon 100 Tangerine 80
39	Tai Pak ...	Lantau Island	1.8	400	Tangerine 150 Lemon 100 Pomelo 150
40	Wang Chau...	Yuen Long	2.6	580	Japanese Apricot 150 Lemon 230 Tangerine 200
41	Kak Tin ...	Sha Tin	1.7	380	Orange 100 Tangerine 100 Japanese Apricot 180
42	San Tin ...	San Tin	4.3	950	Guava 350 Japanese Apricot 200 Lemon 200
43	Fung Yuen ...	Tai Po	2.8	610	Tangerine 200 Lemon 200 Orange 210
44	Tin Sum ...	Sha Tin	3.1	680	Wong Pei 280 Tangerine 200 Lemon 200
45	San Tin ...	Sha Tin	2.2	500	Wong Pei 100 Tangerine 200 Japanese Apricot 200
46	Lai Chi Chong ...	Sai Kung North	2.0	400	Japanese Apricot 200 Lemon 200

APPENDIX 1—*Contd.*TABLE I—*Contd.*

No.	Village	District	Area (Acre)	No. of Trees	Kind of Trees
47	Pai Tau	Sha Tin	1.0	190	Japanese Apricot 100 Lemon 90
48	Wu Kwai Sha ...	Sha Tin	2.3	480	Japanese Apricot 200 Tangerine 30 Lemon 100 Wong Pei 150
49	Wong Chuk Yeung...	Sai Kung North	1.8	380	Japanese Apricot 150 Lemon 150 Wong Pei 80
50	Shuen Fung Wai ...	Yuen Long	2.2	470	Japanese Apricot 270 Local Lemon 200
51	Cheung Lek	Sheung Shui	1.3	270	Japanese Apricot 170 Local Lemon 100
52	Sunshine Island ...	Silvermine Bay	2.4	500	Local Lemon 200 Japanese Apricot 200 Guava 100
53	Shan Ha Wai	Sha Tin	1.5	338	Local Lemon 138 Japanese Apricot 200
54	Yi O	Lantau Island	1.3	280	Local Lemon 140 Japanese Apricot 140
55	Keung Shan	Lantau Island	2.8	556	Local Lemon 200 Japanese Apricot 200 Pomelo 156
56	Sam Mun Tsai	Tai Po	1.54	270	Japanese Apricot 80 Guava 80 Tangerine 80 Sweet Orange 30
57	Tsat Sing Kong ...	Kam Tin	0.5	100	Japanese Apricot
58	Kuk Po	Sba Tau Kok	2.0	410	Citrus
59	Castle Peak Bay (Nunnery)	Castle Peak	1.3	270	Citrus
60	Trappist	Silvermine Bay	0.1	1,000	Pineapple
Total			138.47	24,983	

TABLE J
EXPORT CROPS

No.	Crop	1955/56			1956/57			1957/58		
		Quantity (Picul)	Unit Price (\$)	Amount (\$)	Quantity (Picul)	Unit Price (\$)	Amount (\$)	Quantity (Picul)	Unit Price (\$)	Amount (\$)
1	Vegetable Seeds	74.27	500	37,135.00	219.02	500	109,510.00	111.62	500.0	55,810.00
2	White Cucumber	1,409.13	15	21,136.95	1,176.45	20	23,539.00	436.33	18.8	8,192.35
3	Bitter Cucumber	82.90	34	2,818.60	267.15	45	12,021.75	365.26	43.5	15,981.35
4	Mushroom	—	—	—	24.99	400	9,996.00	28.77	451.7	12,995.25
5	Taro	1,491.46	38	56,675.48	1,820.62	25	45,515.50	1,659.13	25.1	41,678.37
6	Ginger...	4,342.24	26	112,898.24	1,983.67	60	119,020.20	3,011.80½	5.3	155,712.65
7	Lotus Root	1,668.35	40	66,734.00	1,649.60	45	74,232.00	807.69	31.7	25,602.92
8	Lotus Seeds	—	—	—	29,730(fruit)	40	11,892.00	69,920(fruit)	0.396	27,708.00
9	Yam	1,059.88	40	42,395.20	1,597.98	40	60,319.20	1,039.44	27.0	28,087.40
10	White Cabbage	4,797.63	14	67,166.82	1,789.00	15	26,835.00	4,032.87	14.5	58,600.58
11	Radish...	773.45	15	11,601.75	631.13	12	7,573.56	757.42	15.2	11,518.62
12	Turnip...	4,349.14	23	100,030.22	3,644.49	15	54,667.35	2,961.07	19.5	57,865.34
13	Mustard	1,543.19	20	30,863.80	—	—	—	476.45	13.0	6,200.61
14	Waterchestnut	29,118.23	40	1,164,729.20	41,907.17	35	1,466,750.95	33,451.89	39.80	1,331,916.72
15	Arrow Head	1,264.71	48	60,706.08	1,942.97	65	126,293.05	1,836.17	76.0	139,574.35
16	Lychee	9,837.28	40	393,491.20	7,206.63	80	576,530.40	4,500.63	119.4	537,474.60
17	Lemon...	842.14	50	42,107.00	1,402.92	50	70,146.00	1,095.41	37.5	41,092.66
18	Wong Pei	748.62	70	52,403.40	520.59	65	33,838.35	678.35	51.7	35,063.00
19	Japanese Apricot	373.65	60	22,419.00	648.95	60	38,937.00	1,703.18½	45.2	76,955.85
20	Longan	—	—	—	227.00	80	18,160.00	—	—	—
21	Olive, White	—	—	—	—	—	—	1,600.76	25.6	41,017.64
22	Olive, Black	—	—	—	—	—	—	633.68	43.9	27,824.35
	Total...	—	—	\$2,285,311.94	—	—	\$2,885,767.31	—	—	\$2,736,772.61

NOTE: (1) The Quantity of each crop is based on the amount for which Certificates of Origin were issued.

(2) The Unit price is based on the average market price.

TABLE K
INSECTICIDAL TEST ON INSECTS IN 1957

Insecticides or Fungicides	Parts of Insecticides & Fungicides	Parts of H_2O	Insect or Pest Control	% of Control	Source (Manufacturer)	Host Plant	Effectiveness	Remarks
6.5% Gammexane	...	1	Curex and Anopheline Spas. (larvae & pupae)	98%	I. C. I.	—	Excellent	In Chinese water spinach field
Dipterex 50 E	...	1	Curex and Anopheline Spas. (larvae & pupae)	99%	Bayer Co.	—	Excellent	In Chinese water spinach field
Endrin 19½% E...	...	1	Flea beetle	95%	J. D. P.	Brussel sprout	Very good	
Malathion 51½% E	...	1	Flea beetle	99%	U. S. A.	Brussel sprout	Excellent	
Nexa Dip	...	1	Flea beetle	93%	Cela	Brussel sprout	Good	
Agrocide 26 D.P.	...	1	Flea beetle	91%	I. C. I.	Brussel sprout	Good	
Malix	...	1	Flea beetle	89%	Hofchat	Brussel sprout	Good	
Aldrex -2	...	1	White grub	96%	Shell Co.	Lawn	Very good	
Dieldrex -15	...	1	White grub	98%	Shell Co.	Lawn	Excellent	
Endrex	...	1	Dendrorix caterpillar	99%	Shell Co.	Litche	Excellent	
Paradichlorobenzene	Crystal form	—	Long-horned beetle	100%		Litche	Excellent	

TABLE L
LAND UTILIZATION IN HONG KONG—ACREAGE OF CULTIVATED LAND (1954 SURVEY)

	Rice Land			Vegetable Land	Orchard	Field Crop Land	Abandoned Land	Total
	2-crop Paddy Land	1-crop Brackish Paddy Land	1-crop Upland Rice Land					
Sha Tin	746.32	10.75	5.53	132.91	187.30	11.92	227.14	1,321.87
Tai Po and Sai Kung North	2,363.75	—	12.79	371.15	188.42	203.83	461.29	3,601.23
Sheung Shui and Fan Ling	4,433.30	74.24	126.19	519.68	92.84	719.40	256.34	6,221.99
Sha Tau Kok	1,181.32	128.60	74.08	21.07	7.74	345.46	344.15	2,095.42
Kam Tin and San Tin	3,788.52	1,309.36	13.68	252.44	97.84	363.60	276.12	6,101.56
Castle Peak	5,012.17	1,365.47	—	386.62	330.39	1,083.64	300.34	8,478.63
Tsuen Wan	137.05	—	4.36	316.07	22.98	62.67	135.17	678.24
Sai Kung South and Hang Hau	1,112.95	18.88	3.80	84.96	2.64	262.16	288.83	1,774.22
Lantau Island	1,163.37	2.73	—	54.23	19.92	127.96	308.14	1,676.35
Other Islands	253.22	2.12	7.64	115.74	9.29	298.88	117.69	804.58
	20,191.97	2,912.15	248.07	2,254.87	952.36	3,479.52	2,715.15	32,754.09 acres

(1958 SURVEY)

	Rice Land			Vegetable Land	Orchard	Field Crop Land	Abandoned Land	Total
	2-crop Paddy Land	1-crop Brackish Water Paddy Land	1-crop Upland Rice Land					
Sha Tin	725	10	5	180	225	10	215	1,370
Tai Po and Sai Kung North	2,255	—	10	495	230	210	450	3,650
Sheung Shui and Fan Ling	3,835	75	125	1,175	110	680	235	6,235
Sha Tau Kok	1,160	130	75	50	5	340	335	2,095
Kam Tin and San Tin	3,660	1,310	15	415	110	320	265	6,095
Castle Peak and Yuen Long	4,760	1,365	—	655	345	1,105	295	8,525
Tsuen Wan	130	—	5	365	25	60	125	710
Sai Kung South and Hang Hau	1,100	20	5	100	35	260	280	1,770
Lantau Island	1,165	5	—	60	35	130	300	1,695
Other Islands	260	—	5	120	15	300	110	810
	19,050	2,915	245	3,615	1,105	3,415	2,610	32,955 acres

APPENDIX 1—*Contd.*

TABLE M
VALUE OF ANIMAL PRODUCTS LARGELY BY-PRODUCTS
OF IMPORTED LIVESTOCK

Kind of Commodity	Quantity	Av. Unit Price	Total Value
Feathers	88,281 lbs.	\$ 2.50 per lb.	\$ 220,702
Bone Meal	661,380 "	19.00 per picul	94,246
Cattle Horn and Hoofs	978,980 "	50.00 " "	367,117
Hide Cuttings	1,591,606 "	30.00 " "	358,111
Bristles	16,848 "	25.00 per lb.	421,200
Raccoon Hair	865 "	95.00 " "	82,175
Civet Cat Hair	370 "	25.00 " "	9,250
Deer Horns	327 "	160.00 " "	52,320
Bovine Hides	1,389,094 "	250.00 per picul	2,604,551
Misc. Animal Skins	24,300 "	2.00 per lb.	48,600
Goat Hair	128,743 "	15.00 " "	1,931,145
Misc. Food Products	3,726 "	3.00 " "	11,178
Grand Total			\$6,200,595

PRESERVED DUCKS EXAMINED 1957/58

No. of Ducks Leg-banded

129,774

No. of Ducks Leg-bands Removed

127,746

TABLE N
RABIES CONTROL
DOG INOCULATION AND LICENSING

	Hong Kong	Kowloon	New Territories	Total
Inoculated and licensed ...	1,312	1,625	7,373	10,310
Licensed only	2,207	1,376	2,750	6,333
Totals	3,519	3,001	10,123	16,643

TABLE O

ANIMALS EXPORTED UNDER DISEASE FREE CERTIFICATES

Animals and Birds :

Dogs	...	...	...	...	...	...	...	...	...	158
Cats	...	...	...	...	...	...	...	...	...	7
Monkeys	...	...	...	...	...	...	...	...	...	2,385
Poultry	...	...	...	...	...	...	...	...	...	1,042
Turtles	...	...	...	...	...	...	...	...	...	2,534
Cage Birds...	...	...	...	...	...	...	...	...	...	149,709
Pythons	...	...	...	...	...	...	...	...	...	11
Elephant	...	...	...	...	...	...	...	...	...	1
Leopards	...	...	...	...	...	...	...	...	...	3
Squirrels	...	...	...	...	...	...	...	...	...	2

TABLE P

OBSERVATION AND STRAY ANIMALS

(ADMISSIONS AND DISPOSALS IN THE FOUR GOVERNMENT KENNELS)

Observation	Dogs	Cats	Monkeys	Pigs
Remaining in Kennels on 31.3.57	14	3	—	—
Admitted during the year ...	1,425	95	23	4
Returned to Owners	1,159	47	19	3
Destroyed	236	39	3	—
Died in Kennels	12	11	1	—
Remaining in Kennels on 31.3.58	32	1	—	1

Strays	Dogs	Cats	Monkeys	Pigs
Remaining in Kennels on 31.3.57	11	1	—	—
Admitted during the year ...	416	9,269	5	—
Returned to Owners	218	2	2	—
Destroyed	201	9,266	2	—
Died in Kennels	4	—	1	—
Remaining in Kennels on 31.3.58	4	2	—	—

APPENDIX 1—Contd.

TABLE Q

ANIMAL QUARANTINE (FOOD ANIMALS)

A. IMPORTED ANIMALS ADMITTED FOR SLAUGHTER

Source					Swine	Cattle	Sheep & Goats
Mainland China	...	...	...	...	568,084	61,331	12,097
Cambodia	...	...	...	...	29,974	6,366	—
Thailand	...	...	...	...	101	24,897	—
Taiwan	...	...	...	...	13,174	—	—
Vietnam (Saigon)	...	...	...	...	—	280	—
Totals	...	...	...	...	611,333	92,874	12,097

B. LOCAL ANIMALS ADMITTED FOR SLAUGHTER

Animal Depots					Swine	Cattle
Urban Areas	...	...	...	...	189,499	1,104
New Territories	...	...	...	...	60,475	2,492
Totals	...	...	...	...	249,974	3,596

C. IMPORTED AND LOCAL ANIMALS ADMITTED FOR SLAUGHTER

					Swine	Cattle	Sheep & Goats
Grand Totals	...	...	...	...	861,307	96,470	12,097

TABLE R

NEW TERRITORIES SLAUGHTERHOUSES SLAUGHTER FIGURES

Slaughterhouse					Cattle	Swine	Goats	Horses & Mules
Yuen Long	...	...	...	...	1,765	35,144	—	7
Tai Po	...	...	...	...	3,030	32,717	9	—
Total	...	...	...	...	4,795	67,861	9	7

Slaughter House	Cattle				Swine		
	Local	Mainland	Thailand	Cambodia	Local	Mainland	Taiwan
Yuen Long	659	1,083	23	—	32,253	2,852	39
Tai Po	1,833	1,141	55	1	28,774	3,943	—
Total	2,492	2,224	78	1	* 61,027	6,795	39

* 606 local pigs were transferred from Ma Tau Kok Swine Depot.

TABLE S

DISEASE INVOLVING TOTAL CONDEMNATION IN
NEW TERRITORIES SLAUGHTERHOUSES

								Cattle	Swine	Goats
Swine Fever	...	...	...	...	...	...	...	—	87	—
Swine Erysipelas	...	...	...	...	...	...	...	—	14	—
Septicaemia	...	...	...	...	...	...	...	—	53	—
Pyæmia	...	...	...	...	...	...	...	—	1	—
Jaundice	...	...	...	...	...	...	...	—	6	—
Ill-bled	...	...	...	...	...	...	...	1	2	—
Gangrene	...	...	...	...	...	...	...	—	2	—
Emaciation	...	...	...	...	...	...	...	2	—	—
Total	...	...	...	...	...	...	...	3	165	—

TABLE T

ANIMALS FOUND DEAD IN LAIRAGES, CONDEMNED ANIMALS,
CONDEMNED OFFAL AND MEAT PARTS DESTROYED
NEW TERRITORIES SLAUGHTERHOUSES

	Cattle		Swine	
	Number	lbs.	Number	lbs.
Condemned Animals	3	415	165	16,420
Dead Animals	9	2,080	136	16,435
Meat Parts and Offal	—	1,573	—	4,062
Slinks	4	25	—	—
Total	16	4,093	301	36,917

TABLE U

FRESH MILK PRODUCTION IN HONG KONG FOR
THE YEAR ENDING 31ST MARCH, 1958

Source (Dairy)	Total Production (lbs.)	Sold (lbs.)	Spoiled or fed to calves, etc.	Total Dairy Cattle
Dairy Farm	7,025,015	6,845,015	180,000	1,552
Kowloon Dairy... ..	1,390,420	1,388,670	1,750	300
China Pasteurization Co., 103 Tam Kung Road	1,841,880	1,840,340	1,540	840 (18 Dairies)
Shun Lee Pasteurization Co., 101 Tam Kung Road	898,560	897,400	1,160	—
Total	11,155,875	10,971,425	184,450	2,692

TABLE V
QUANTITY, VALUE AND AVERAGE WHOLESALE PRICES OF FISH MARKETING IN HONG KONG

	Fresh Fish			Salt/dried Fish			Total	
	Piculs	Value (\$)	Average price (\$) per picul	Piculs	Value (\$)	Average price (\$) per picul	Piculs	Value (\$)
1946/47	...	...	...	...	...	...	...	...
1947/48	36,539	3,400,439	93	216,976	16,256,905	75	253,515	19,657,344
1948/49	58,660	4,133,624	70	197,811	10,339,470	52	256,471	14,473,094
1949/50	139,686	10,223,243	73	257,762	12,869,533	50	397,448	23,092,776
1950/51	201,802	20,430,850	101	278,898	20,282,397	73	480,700	40,713,287
1951/52	307,284	25,740,401	84	190,174	10,802,599	57	497,458	36,593,000
1952/53	376,930	31,291,369	83	126,650	8,570,925	68	503,581	39,862,294
1953/54	446,494	30,518,212	68	134,174	7,366,214	55	590,668	37,884,426
1954/55	441,960	36,459,313	82	111,636	8,426,428	75	553,596	44,885,741
1955/56	588,058	34,649,538	59	98,631	4,804,276	49	686,689	39,453,814
1956/57	572,194	33,350,140	58	89,968	3,834,090	43	662,162	37,204,230
	608,058	43,288,974	71	88,788	4,521,485	51	696,846	47,810,432
1957/58	...	...	...	...	...	...	...	...
April	65,670	4,196,003	64	13,122	567,964	43	78,792	4,763,967
May	56,621	3,680,628	65	11,359	462,924	41	67,980	4,143,552
June	53,817	3,067,129	57	6,642	218,049	33	60,459	3,285,178
July	50,515	3,189,959	63	6,451	251,272	39	56,966	3,441,231
August	47,035	3,277,768	70	4,596	205,841	45	51,631	3,483,609
September	48,211	3,170,675	66	5,510	297,305	54	53,721	3,467,980
October	62,457	4,215,470	67	7,964	431,177	55	70,321	4,646,647
November	70,838	4,722,775	67	11,569	590,627	51	82,434	5,313,402
December	72,998	4,079,710	56	7,125	333,785	47	80,123	4,413,495
January	61,659	3,806,673	62	4,670	195,832	42	66,329	4,002,505
February	47,990	3,022,999	63	4,354	153,016	37	52,144	3,176,015
March	77,137	4,398,603	57	6,207	161,889	26	83,344	4,560,492
Total...	714,948	44,828,392	63	89,296	3,869,681	43	804,244	48,698,073
								61

TABLE W

APPENDIX 1—Contd.

LANDINGS OF THE MAIN SPECIES OF FISH MARKETED IN 1957/58
AND FIGURES FOR THE SAME SPECIES DURING THE PREVIOUS YEAR

English and Chinese Names	Scientific Name	Landings in Piculs		Difference	
		1956/57	1957/58	Piculs	Percentage
1. Golden Thread (Hung Sam 紅衫)	<i>Synagris virgatus</i> (Houttuyn)	95,641	108,426	+ 12,785	+ 13.4%
2. Conger Pike (Moon Sin 門蟾)	<i>Muraenesox arabious</i> (Bloch and Schneider)	43,814	40,721	- 3,093	- 7.1%
3. Lizard Fish (Kau Kwun 狗棍)	<i>Saurida tumbil</i> (Bloch)	40,603	39,105	- 1,498	- 3.7%
4. Red Sea Bream (Poh Lap 波鯪)	<i>Taia tumifrons</i> (Schlegel)	34,168	35,754	+ 1,586	+ 4.6%
5. Anchovies (Kung Yue 公魚)	<i>Stolephorus</i> sp.	32,952	33,038	+ 86	+ 0.3%
6. Red Snapper (Hung Yue 紅魚)	<i>Lutjanus erythropterus</i>	20,952	32,101	+ 11,149	+ 53.2%
7. Melon Seed (Kwa Vat 瓜核)	<i>Psenopsis anomala</i> (Schlegel)	19,881	30,901	+ 11,020	+ 55.4%
8. Mackerel Scad (Tse Yue 鱈魚)	<i>Decapterus lajang</i> (Bleeker)	17,119	28,379	+ 11,260	+ 65.8%
9. Carangoid Fish (Tse Tsai 鱸仔)	<i>Carangidae</i> sp.	25,346	24,563	- 783	- 3.1%
10. Croaker (Wak Yue 魷魚)	<i>Argyrosomus</i> sp.	23,383	24,333	+ 950	+ 4.1%
11. Horse Head (Ma Tau 馬頭)	<i>Branchiostegus japonicus</i> (Houttuyn)	21,431	18,128	- 3,303	- 15.4%
12. Mackerel (Kaaui Yue 鰵魚)	<i>Cybius</i> sp.	11,579	16,903	+ 5,324	+ 46.0%
13. Yellow Croaker (Wong Fah Yue 黃花)	<i>Pseudosciaena crocea</i> (Richardson)	19,772	16,366	- 3,406	- 17.2%
14. Snapper (Lap Yue 鯪魚)	<i>Pagrosomus major</i> (Schlegel)	11,923	16,183	+ 4,260	+ 35.7%
15. Red Goat Fish (Hung Sin 紅線)	<i>Upeneus moluccensis</i> (Bleeker)	14,535	16,092	+ 1,557	+ 10.7%
16. Big Eyes (Muk Min 木棉)	<i>Priacanthus tayenus</i> (Richardson)	14,949	14,510	- 439	- 2.9%
17. Hair Tail (Taai Yue 帶魚)	<i>Trichiurus haumela</i> (Forsk.)	16,763	14,186	- 2,577	- 15.4%
18. White Herring (Tso Paak 鱈白)	<i>Ilisa elongata</i> (Bennett)	9,516	12,166	+ 2,650	+ 27.9%
19. Shark (Sah Yue 沙魚)	<i>Elasmobranchs</i>	13,025	12,041	- 984	- 7.6%
20. Cuttle Fish (Muk Yue 墨魚)	<i>Sepia</i> sp.	9,778	9,602	- 176	- 1.8%
21. Macao Sole (Ta Sa 撻沙)	<i>Cynoglossus macrolepidotus</i>	12,712	8,252	- 4,460	- 35.1%
22. Golden Sardine (Wong Chak 黃澤)	<i>Sardinella aurita</i> (Cuv. & Val.)	1,422	7,900	+ 6,478	+ 455.5%
23. All Other Species		185,582	244,594	+ 59,012	+ 31.8%
Totals		696,846	804,244	+ 107,398	+ 15.4%

TABLE X
MONTHLY LANDINGS (IN PICULS) BY THE FOUR MAIN CATEGORIES OF VESSELS

	1956/57				1957/58			
	Mechanized Fleet				Mechanized Fleet			
	Trawler Companies	Native Type	Foreign Landings	Sub-Total	Trawler Companies	Native Type	Foreign Landings	Sub-Total
April ...	7,412	29,302	611	37,325	8,863	37,099	67	46,029
May ...	7,251	22,070	841	30,162	6,849	36,967	590	44,406
June ...	3,254	20,060	1,485	24,799	8,425	31,182	1,271	40,878
July ...	4,076	27,335	1,821	33,232	5,738	30,291	742	36,771
August ...	5,048	26,991	2,259	34,298	6,082	25,560	1,216	32,858
September ...	3,733	27,325	1,996	33,054	7,029	28,479	1,221	36,729
October ...	3,486	28,644	983	33,113	6,319	37,500	427	44,246
November ...	3,653	29,239	1,378	34,270	8,303	44,867	—	53,170
December ...	4,320	31,755	1,101	37,176	9,511	45,905	—	55,416
January ...	7,520	34,229	217	41,966	7,301	40,414	—	47,715
February ...	6,312	24,602	588	31,502	8,327	31,624	186	40,137
March ...	8,636	40,116	381	49,133	10,941	53,091	287	46,319
Total (Piculs) ...	64,701	341,668	13,661	420,030	93,688	442,979	6,007	542,674
Percentages ...	9.28%	49.03%	1.96%	60.27%	11.65%	55.08%	0.74%	67.47%
								32.53%

Remarks: 'Foreign landings' mean the controlled landings of Japanese fish.

During the year April, 1956 to March, 1957 the mechanized fleet expanded from 968 to 1,524 vessels, an increase of 629. Figures for 1957/58 were 1,524 to 2,287 an increase of 763.

TABLE XA

DIESEL ENGINES INSTALLED IN FISHING VESSELS DURING 1957/58

Trade Mark	Number of Engines			Horse-Power	
	New	Old	Total	Range	Most popular Rating
(A) <i>British</i>					
‘Cardner’	18	311*	329	28 - 152	60
‘Lister’	45	6	51	7 - 54	18
‘Petter’	15	6	21	10	10
‘Ailsa Craig’	9	7	16	10 - 60	20
‘Ruston’	3	11	14	5 - 34	15
‘Southiron’ (Made in Hong Kong)	1	6	7	20 - 44	22½
‘Kelvin’	3	2	5	44 - 132	132
Others	1	10	11	10 - 100	70
Total ...	95	359	454		
(B) <i>Japanese</i>					
‘Daiya’	110	13	123	5 - 33	7
‘Yanmar’	114	5	119	4 - 16	4
Others	4	1	5	3 - 200	3
Total ...	228	19	247		
(C) <i>Danish</i>					
‘Bukh’	66	—	66	10 - 30	10
(D) <i>German</i>					
‘M. W. M.’	22	1	23	22 - 44	22
‘Guldner’	—	5	5	20 - 26	20
‘Deutz’	3	—	3	50 - 155	70
‘Bauscher’	1	—	1	16	16
Total ...	26	6	32		
(E) <i>Swedish</i>					
‘Bolinder’	27	2	29	11½ - 48	23
(F) <i>American</i>					
‘Cummins’	2	6	8	132-150	132
Others	—	4	4	30 - 172	172
Total ...	2	10	12		
(G) <i>Belgian</i>					
‘La Meuse’	9	—	9	12	12
(H) <i>Chinese</i>					
‘Shanghai’	1	—	1	40	40
* Grand Total ...	454	396	850†		

* Most of these were lorry and bus engines converted for Marine use.

† 848 fishing boats were mechanized in 1957/58 and two of these vessels were fitted with twin engines.

APPENDIX 1—*Contd.*

TABLE XA—*Contd.*

COMPARISON OF BRITISH AND FOREIGN MADE ENGINES

	Number of Engines		
	New	Old	Total
British Made	95	359	454
Foreign Made	359	37	396
Total	454	396	850

TABLE XB

DATA CONCERNING NEWLY-BUILT MECHANIZED FISHING JUNKS REGISTERED DURING THE YEAR 1957/58

Type of Junk	Deep Sea Trawler	Inshore Trawler	Shrimp Trawler	Big Long Liner	Medium Long Liner	Small Long Liner	Hand Liner	Big Purse Seiner	Purse Seiner	Gill Netter	Fish Collector
No. of Junk	13	77	78	5	25	184	10	4	146	32	3
Reg. Length (L)	Min. 55'-10" Max. 76'-2" Aver. 67'-8"	33'-5" 59'-5" 49'-8"	26'-0" 65'-9" 45'-11"	55'-10" 69'-0" 61'-2"	34'-6" 58'-6" 43'-11"	20'-7" 50'-10" 28'-10"	24'-3" 40'-7" 29'-11"	50'-2" 58'-10" 54'-11"	22'-10" 47'-6" 33'-3"	23'-3" 58'-3" 30'-11"	24'-9" 47'-8" 39'-3"
Reg. Breadth (B)	Min. 18'-3" Max. 24'-5" Aver. 21'-10"	11'-9" 20'-10" 16'-1"	9'-9" 17'-8" 14'-8"	19'-9" 24'-3" 21'-6"	11'-6" 17'-10" 15'-8"	7'-3" 15'-10" 10'-10"	9'-2" 14'-8" 11'-4"	17'-6" 21'-3" 20'-1"	8'-5" 16'-6" 12'-9"	8'-8" 17'-6" 11'-2"	9'-7" 16'-10" 14'-1"
L	Min. 62.75 Max. 76.17 Aver. 67.67	53.58 20.83 48.83 13.75 49.67 16.08	43.50 16.58 65.75 15.25 45.92 14.67	55.83 21.08 66.83 21.50 61.17 21.50	34.50 14.58 58.50 17.83 43.92 15.67	29.58 13.42 34.75 10.42 28.83 10.83	34.67 14.25 28.75 9.67 29.92 11.33	53.83 20.50 50.17 17.50 54.92 20.08	29.50 13.25 47.50 13.50 33.25 12.75	23.50 9.67 47.67 14.75 33.25 11.17	24.75 9.58 47.67 15.83 39.25 14.08
B	Min. 22.92 Max. 20.50 Aver. 21.83	20.83 76.17 67.67 21.83	16.58 65.75 15.25 45.92 14.67	21.08 66.83 21.50 61.17 21.50	14.58 58.50 17.83 43.92 15.67	13.42 34.75 10.42 28.83 10.83	14.25 28.75 9.67 29.92 11.33	20.50 50.17 17.50 54.92 20.08	13.25 47.50 13.50 33.25 12.75	9.67 47.67 14.75 33.25 11.17	9.58 47.67 15.83 39.25 14.08
Ratio	Min. 2.82 Max. 2.055 Aver. 2.6714	1.315 829	1.037 622	1.374 2.343 1.703	2.201 1.201 653	61 810 209	117 528 246	938 1.515 1.501	86 740 338	102 1.084 263	135 740 535
Reg. Capacity (Piculs)	Min. 80 Max. 188 Aver. 129	60 132 63	5 72 58	70 144 106	20 80 50	4 60 16	4 48 18	60 72 69	6 70 28	4 88 19	6 72 46
Main Engine Horse Power	Min. 1,676	4,868	4,545	532	1,261	2,978	178	276	4,075	616	138
Cost of Wooden Hull	Min. \$ 21,600 Max. 75,000 Aver. 53,415 Total \$694,400	\$ 4,100 24,000 10,575 \$814,300	\$ 2,800 13,200 7,665 \$597,870	\$ 21,000 64,000 37,220 \$186,100	\$ 5,800 17,240 9,635 \$240,870	\$ 800 11,400 3,423 \$629,914	\$ 1,900 32,000 3,869 \$38,690	\$15,000 8,000 21,600 \$86,400	\$ 1,550 32,000 5,238 \$764,700	\$ 1,700 14,000 3,695 \$118,240	\$ 2,400 13,300 8,567 \$25,700
H.P.	Min. 2395 Max. 100 Ratio 129 Aver. 2055	1142 60 273 63 829	144 5 339 58 622	114 2343 132 1374 106 1703	54 1201 48 299 50 653	4 144 48 236 16 209	4 117 23 175 18 246	72 1515 60 938 69 1301	6 234 48 299 28 338	8 234 60 458 19 263	6 135 72 731 46 535
Capacity Ratio (H.P./Pic.)	Min. 30,500 Max. 75,000 Ratio 2296 Aver. 53,415	1045 10,600 273 10,575 829	6,500 1025 12,500 584 7,665 622	21,000 1395 64,000 2343 37,220 1703	7,500 175 12,000 560 9,635 653	1,200 175 5,800 144 3,423 209	4,000 372 3,400 126 3,869 246	18,000 1315 32,000 1515 21,600 1301	3,800 578 8,600 234 5,238 338	3,100 458 2,400 102 3,695 263	10,000 740 13,300 731 8,567 535
Cost	Min. 2104 Max. 2296 Ratio 53.415 Aver. 2055	1045 10,600 273 10,575 829	6,500 1025 12,500 584 7,665 622	21,000 1395 64,000 2343 37,220 1703	7,500 175 12,000 560 9,635 653	1,200 175 5,800 144 3,423 209	4,000 372 3,400 126 3,869 246	18,000 1315 32,000 1515 21,600 1301	3,800 578 8,600 234 5,238 338	3,100 458 2,400 102 3,695 263	10,000 740 13,300 731 8,567 535

* Made in Macau.

† Made in China.

TABLE Y
ESTIMATED NUMBER OF FISHING JUNKS (INCLUDING MECHANIZED VESSELS) AND OPERATIVE FISHERFOLK IN
THE COLONY AT CHINESE NEW YEAR (18TH FEBRUARY, 1958)

Type of Vessel	Aberdeen		Shau Kei Wan		Cheung Chau		Tai O		Tai Po		Tap Mun		Kat O		Stanley		Castle Peak		Sai Kung		Sha Tau Kok		Yau Ma Tei		Fishing Companies		Total	
	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk	Ves- sels	Fisher- folk
Liners	10	400	54	2,160	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	40	—	—	65	2,600
	43	688	40	640	—	—	2	32	—	—	—	—	—	—	—	—	—	—	5	80	—	2	32	—	—	92	1,472	
	428	2,568	246	1,476	90	540	79	474	20	120	6	36	—	—	4	24	31	186	30	180	—	5	30	—	—	939	5,634	
	79	474	107	642	135	810	1	6	281	1,686	56	336	18	108	64	384	204	1,224	32	192	64	42	252	—	—	1,083	6,498	
Seiners	131	1,048	—	—	93	744	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	224	1,792	
	8	224	2	56	34	952	5	140	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	49	1,372	
	486	3,888	256	2,048	225	1,800	6	48	103	824	107	856	112	896	104	832	146	1,168	78	624	87	696	66	528	—	1,776	14,208	
Trawlers	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	38	760	141	2,820	45	900	—	—	—	—	—	—	—	—	—	—	78	1,560	—	—	—	—	—	—	285	19	285	
	317	4,755	113	1,695	3	45	6	90	—	—	—	—	—	—	—	—	136	2,040	—	—	—	14	210	—	—	589	8,835	
	403	2,418	91	546	44	264	33	198	64	384	—	—	—	—	—	—	130	780	—	—	—	3	18	1	6	789	4,614	
Gill Netters	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	25	150	2	12	19	114	262	1,572	—	—	—	—	—	—	7	42	30	180	—	—	—	—	—	—	—	345	2,070	
'Big Tail' Junk Hok Lo T'eng	90	720	15	120	—	—	—	—	324	2,592	—	—	—	—	—	—	2	16	10	80	115	920	—	—	—	556	4,448	
Fish Collectors	55	440	24	192	10	80	3	24	—	—	1	8	—	—	2	16	8	64	—	—	—	—	2	16	—	—	105	840
	134	1,072	36	288	10	80	—	—	12	96	12	96	40	320	3	24	92	644	80	640	19	132	—	—	—	438	3,392	
Miscellaneous	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	2,247	19,605	1,127	12,695	708	6,329	397	2,584	804	5,702	182	1,332	170	1,324	184	1,322	857	7,862	235	1,796	285	2,132	135	1,126	20	291	7,351	64,100

* Includes 9 British registered (steel) trawlers.

APPENDIX 1—Contd.

TABLE Z

HONG KONG MECHANIZED FISHING VESSELS AND
CHANGES DURING 1957/58

	Type of Vessel	Total end of March 1957	Changes		Total end of March 1958
			Increase	Decrease	
Trawlers	Company operated British registered (steel) trawlers	11	—	2	9
	Company operated Primitive & Japanese type trawlers	19	1	10	10
	Native type deep sea trawlers	58	19	1	76
	Modern type shrimp trawlers	1	—	—	1
	Native type shrimp trawlers	176	119	16	279
	Native type inshore trawlers... ..	95	99	2	192
Liners	Native type deep sea long liners	56	10	—	66
	Native type inshore long liners	479	272	17	734
	Native type hand liners	41	18	4	55
Seiners	Native type inshore purse seiners	429	228	23	634
	Pa T'eng... ..	23	27	1	49
	Ku Peng T'eng... ..	14	—	2	12
Misc.	Native type inshore gill netters	32	52	2	82
Collectors	Native type fish collectors	90	3	5	88
Total... ..		1,524	848	85	2,287

FIGURE 1
MONTHLY RAINFALL 1957
RECORDS FROM AGRICULTURAL STATIONS

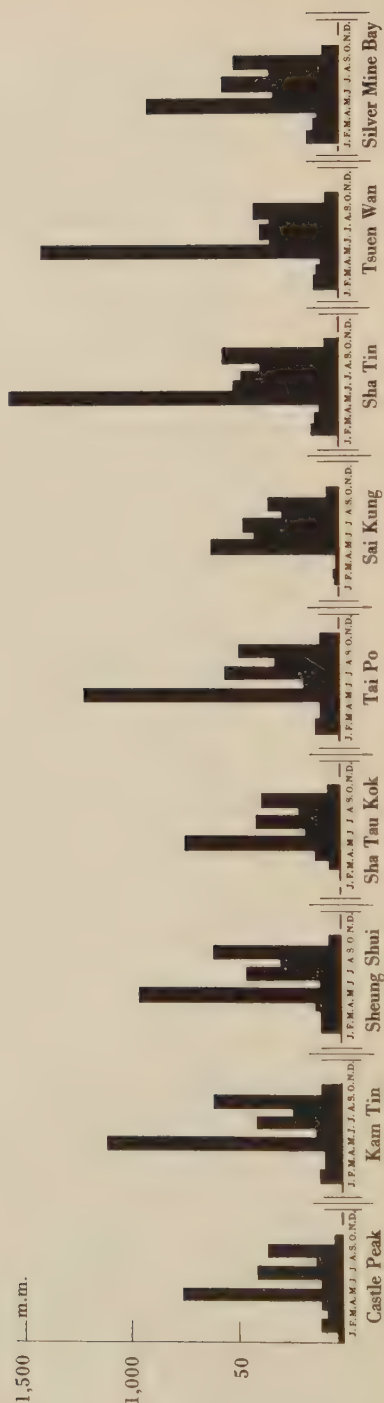
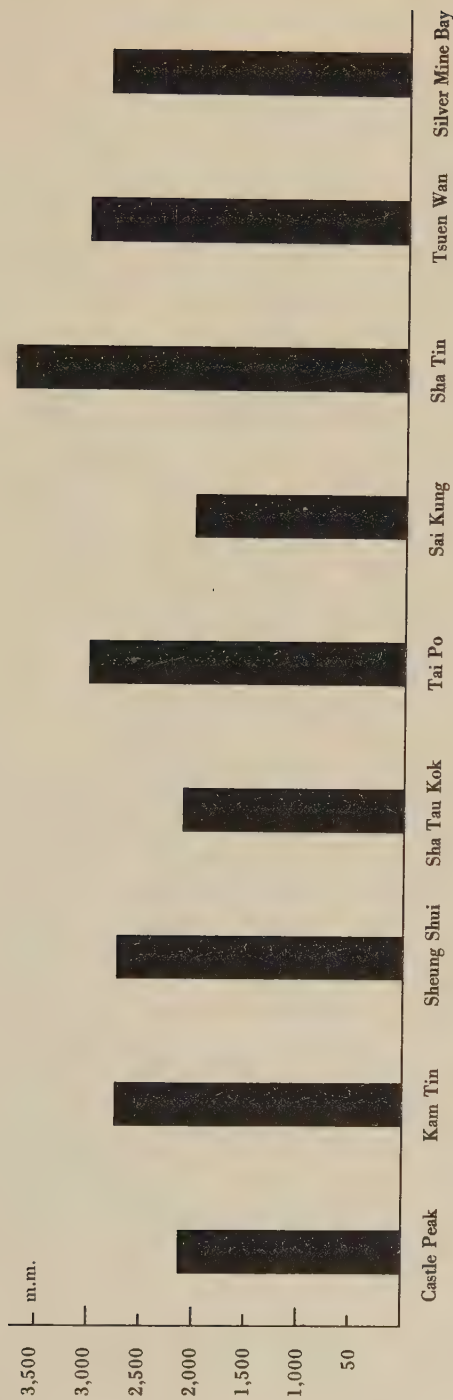
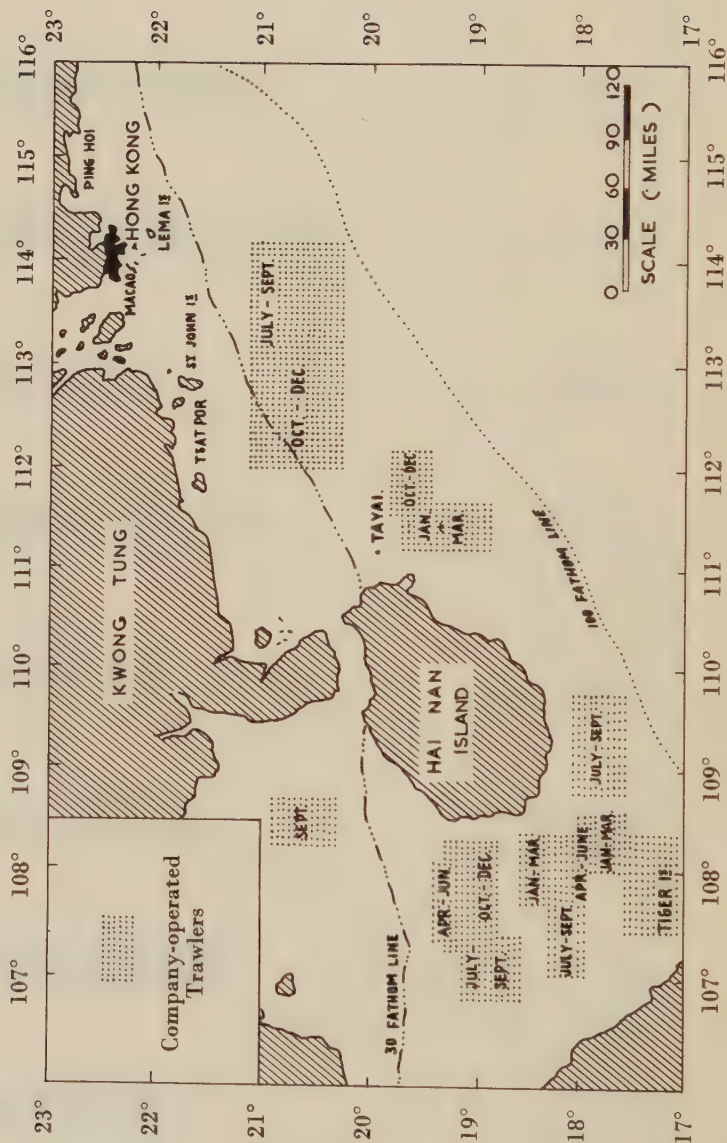


FIGURE 2
ANNUAL RAINFALL 1957
RECORDS FROM AGRICULTURAL STATIONS

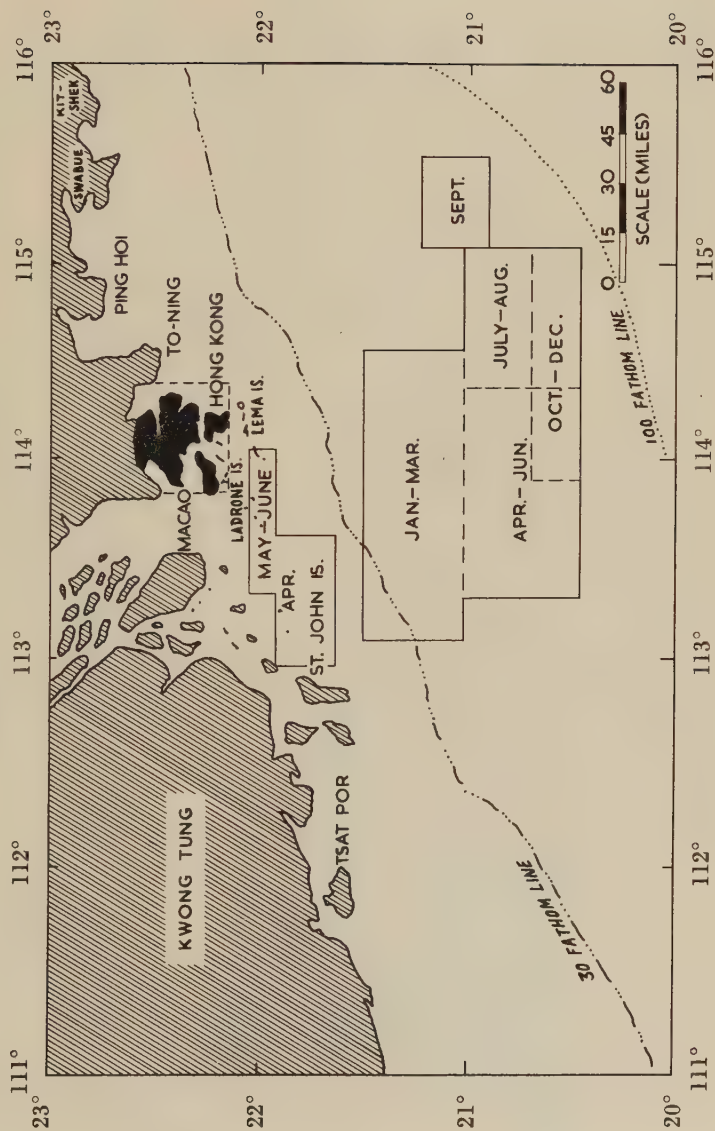


DISTANT WATER FISHING GROUND DURING 1957/58



OF THE MECHANIZED

'DEEP SEA' JUNK TRAWLERS

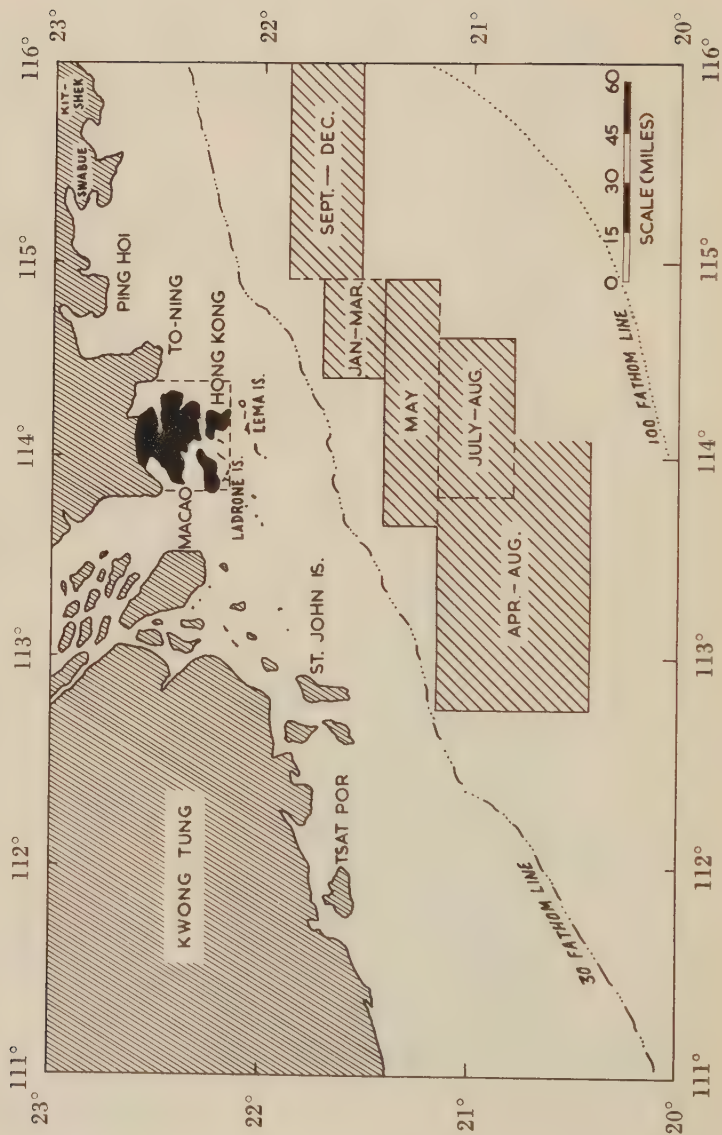


MAIN FISHING GROUND DURING 1957/58

APPENDIX 5

OF THE MECHANIZED

'DEEP SEA' LONG LINERS



APPENDIX 6

IMPORTS AND EXPORTS OF TIMBER AND FUEL FOR YEAR ENDING 31ST DECEMBER, 1957

Category	Gross Imports		Gross Exports		Net Imports		Percentage by value of gross imports or exports from or to different sources or destinations	
	Hundred of Cu. ft.	Value \$	Hundred of Cu. ft.	Value \$	Hundred of Cu. ft.	Value \$	Imports	Exports
TIMBER								
(A) Round :								
1. Teak ...	281,414	3,945,053	17,394	220,225	264,020	3,724,828	Borneo, British 57%	U. S. A. ... 33%
2. Primary Hardwood ...	358,037	2,019,236	55,993	876,556	302,044	1,142,680	Thailand ... 19%	Macau ... 20%
3. Secondary Hardwood ...	2,041,151	6,537,249	167,650	556,235	1,874,501	5,881,014	China (excluding Formosa) ... 9%	United Kingdom ... 18%
4. Light Hardwood ...	7,180,186	20,683,540	203,350	729,026	6,986,836	19,954,514	Burma ... 5%	China (excluding Formosa) ... 10%
5. Softwood ...	226,329	1,252,965	572	7,160	265,757	1,245,805	Canada ... 2%	Australia ... 3%
6. Timber for match-making	1,934	14,227	—	—	1,934	14,227	U.S.A. ... 1%	New Zealand ... 2%
7. Poles, Pilings & Posts	180,159	552,239	4,822	292,350	180,159	552,239	Malaya ... 1%	Formosa ... 1%
8. Decorative Woods ...	98,627	1,974,973	—	—	93,805	1,682,623	Cambodia ... 1%	Other Destina- tions ... 4%
(B) Sawn :								
9. Teak ...	501,569	7,845,860	11,147	278,872	490,422	7,566,988	India ... 1%	—
10. Primary Hardwood ...	14,227	367,914	—	—	14,227	367,914	Other Sources ... 1%	—
11. Secondary Hardwood ...	12,370	50,597	167,992	1,306,979	—	—	—	—
12. Light Hardwood ...	527,785	2,141,641	507,233	4,842,551	24,552	5,908,308	—	—
13. Softwood ...	1,092,050	5,925,792	2,599	17,484	1,089,451	5,908,308	—	—
14. Timber for match-making	—	—	—	—	—	—	—	—
15. Decorative Woods ...	9,051	188,103	309	6,087	8,742	182,016	—	—
Total Timber ...	12,564,889	53,529,389	1,139,061	9,233,525	11,592,410	48,223,156	China (excluding Formosa) ... 78%	Macau ... 100%
FUEL								
(A) Firewood ...	3,826,055	13,016,854	10,841	33,095	3,815,214	12,983,759	Malaya ... 12%	—
(B) Charcoal ...	954,719	9,239,824	22,758	308,912	931,961	8,930,912	Borneo, British 9%	—
Total Fuel...	4,780,774	22,256,678	33,599	342,007	4,747,175	21,914,671	Macau ... 76%	Macau ... 79%
							China (excluding Formosa) ... 23%	Middle & Near East Countries ... 20%
							Other Sources ... 1%	Other Destina- tions ... 1%

APPENDIX 7

KADOORIE AGRICULTURAL AID LOAN FUND

STATEMENT OF ACCOUNTS FOR THE YEAR, 1957

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE				INCOME			
To Bad Debts Account...	...	...	\$ 400.00	By Interest on Current Bank Account	...	...	\$4,515.18
To Balance transferred to Trust Fund	...	...	4,115.18				
			<u>\$4,515.18</u>				<u>\$4,515.18</u>

BALANCE SHEET AS AT 31ST DECEMBER, 1957

LIABILITIES				ASSETS			
TRUST FUND:				Cash at Bank	...	...	\$ 677,016.80
Donated jointly by Mr. H. Kadoorie, O.B.E. Chev. Leg. Hon. and Mr. L. Kadoorie, Chev. Leg. Hon.	...	\$250,000.00		Loans Outstanding:			
Donated by Hong Kong Government				Balance brought down	...	\$291,388.25	
Balance at 1.1.57	...	\$250,000.00		Loans issued during the year, 1957...	523,204.73	\$814,592.98	
Additions during the year, 1957	...	750,000.00	1,000,000.00 \$1,250,000.00	Less Repayments during the year, 1957	...	234,222.03	
						580,370.95	
Transferred from Income and Ex- penditure Account:				Less Bad Debts written off	...	400.00	
Balance at 1.1.57	...	2,872.57		Balance outstanding at 31.12.57	...	579,970.95	
Add Surplus during the year, 1957		4,115.18					
Balance at 31.12.57	...	6,987.75	\$1,256,987.75				
			<u>\$1,256,987.75</u>				<u>\$1,256,987.75</u>

NOTE: In accordance with the provisions of the Kadoorie Agricultural Aid Loan Fund Ordinance, 1955 (No. 25 of 1955), the cost of administering the Fund has been defrayed out of the general revenue of the Colony and no interest has been charged on any loan made, under Section 6 of the Ordinance; the Trustee shall have power subject to the direction of the Committee to write off from the moneys of the Fund any sums which the Committee deem to be irrecoverable; and receive any further donations to the Fund which may from time to time be made either by H. Kadoorie or by L. Kadoorie or by the Government.

Certified Correct.

(Sgd.) W. J. BLACKIE,
Trustee.
January, 1958.

The above Statement of Accounts has been examined in accordance with Section 11(1) of the Kadoorie Agricultural Aid Loan Fund Ordinance, 1955. I have obtained all the information and explanations that I have required, and I certify, as a result of this audit, that in my opinion the Statement is correct.

2. At the date of the Balance Sheet a considerable number of farmers were in arrears with their repayment instalments. The Trustee was aware of these arrears and had taken steps to strengthen the field staff needed to collect them.

(Sgd.) F. E. L. CARTER,
Director of Audit.
10th March, 1958.

